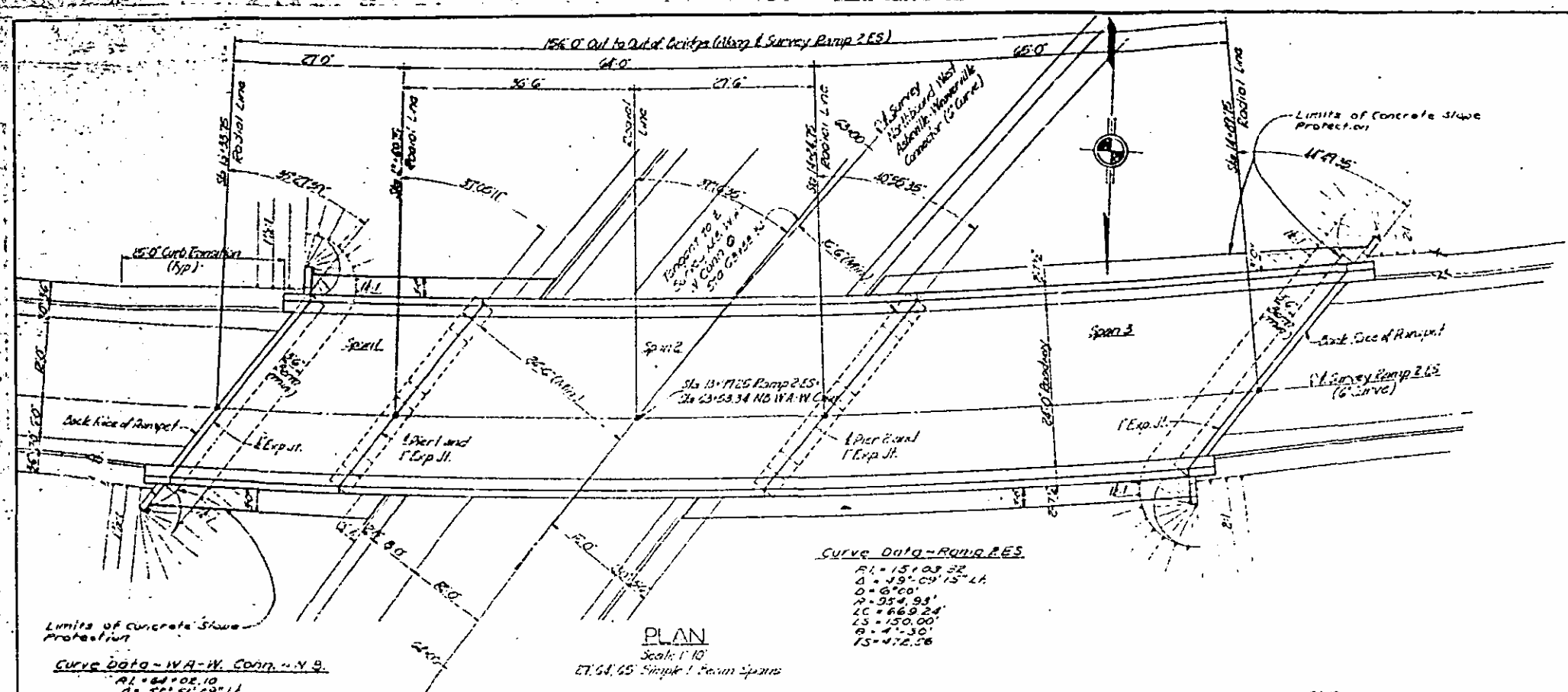
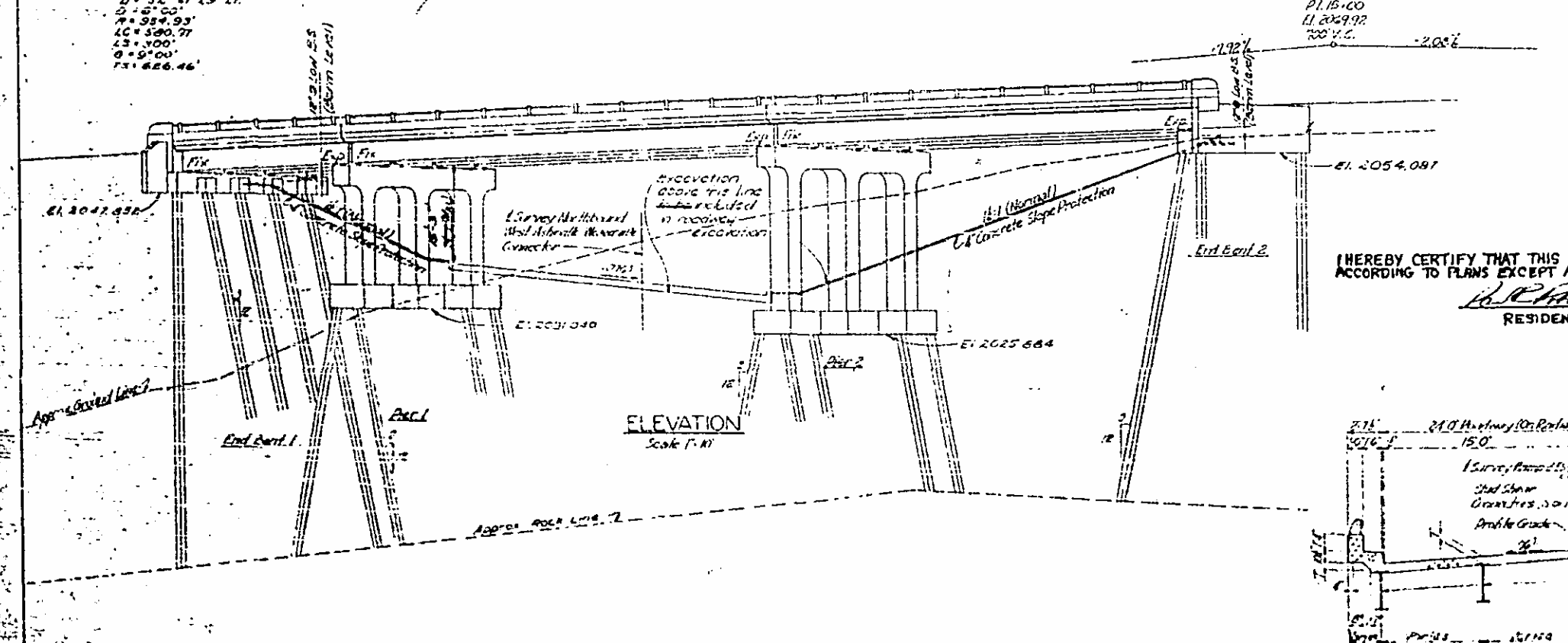




Curve Data - RAMP 2 ES
 P1 = 151.03 32
 Q = 49.00 15' 14"
 R = 6' 00"
 L = 95.4 93'
 TS = 66.9 24'
 LS = 150.00'
 E = 4' 30"
 RS = 472.56

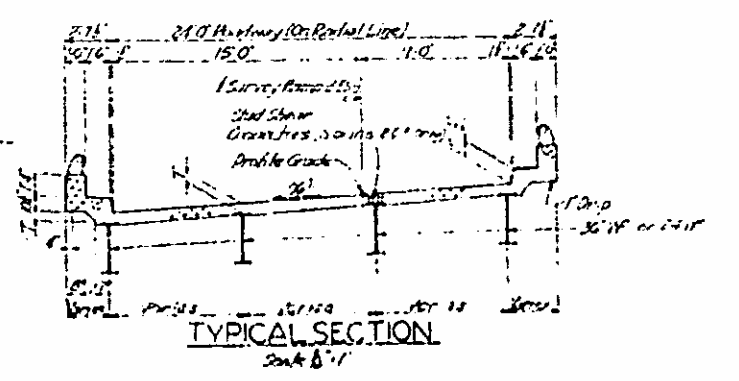
PLAN
 Scale 1" = 10'
 27.64 65 Simple 1 Span Spans

Curve Data - W.A.-W. Conn. - N.Y. 9
 P1 = 64.02 10
 Q = 50.00 15' 14"
 R = 6' 00"
 L = 95.4 93'
 TS = 66.9 24'
 LS = 150.00'
 E = 4' 30"
 RS = 472.56



ELEVATION
 Scale 1" = 10'

HEREBY CERTIFY THAT THIS STRUCTURE WAS BUILT
 ACCORDING TO PLANS EXCEPT AS NOTED HEREIN.
 W.C. BUNKER
 RESIDENT ENGINEER



TYPICAL SECTION
 Scale 1" = 10'

GENERAL NOTES

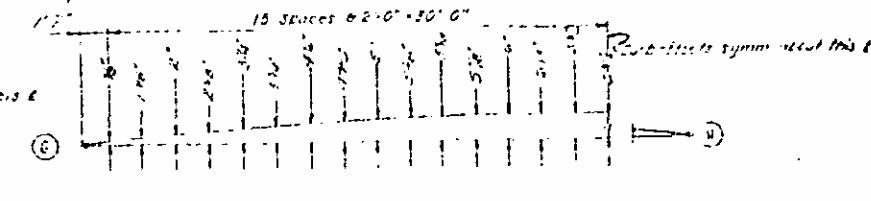
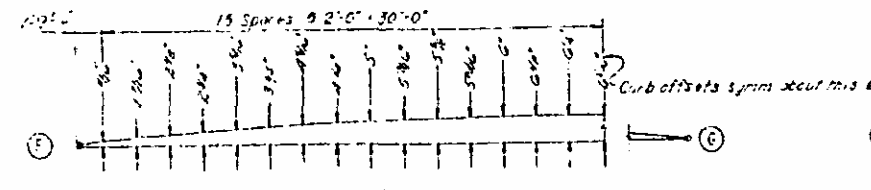
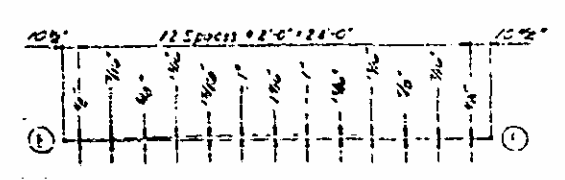
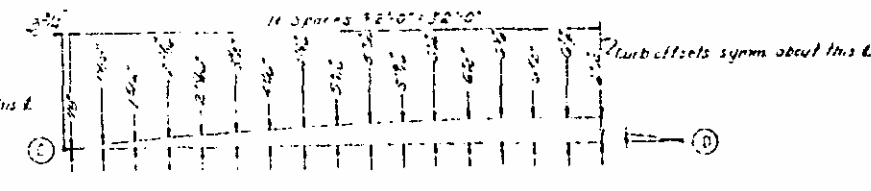
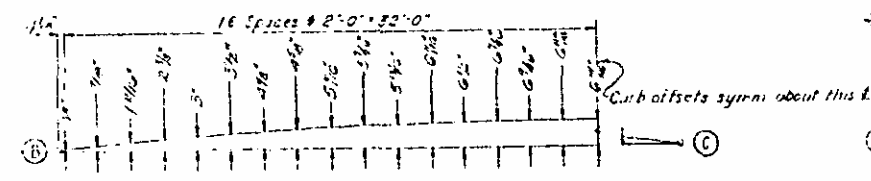
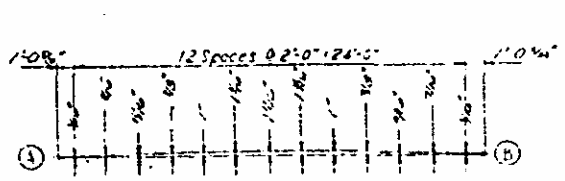
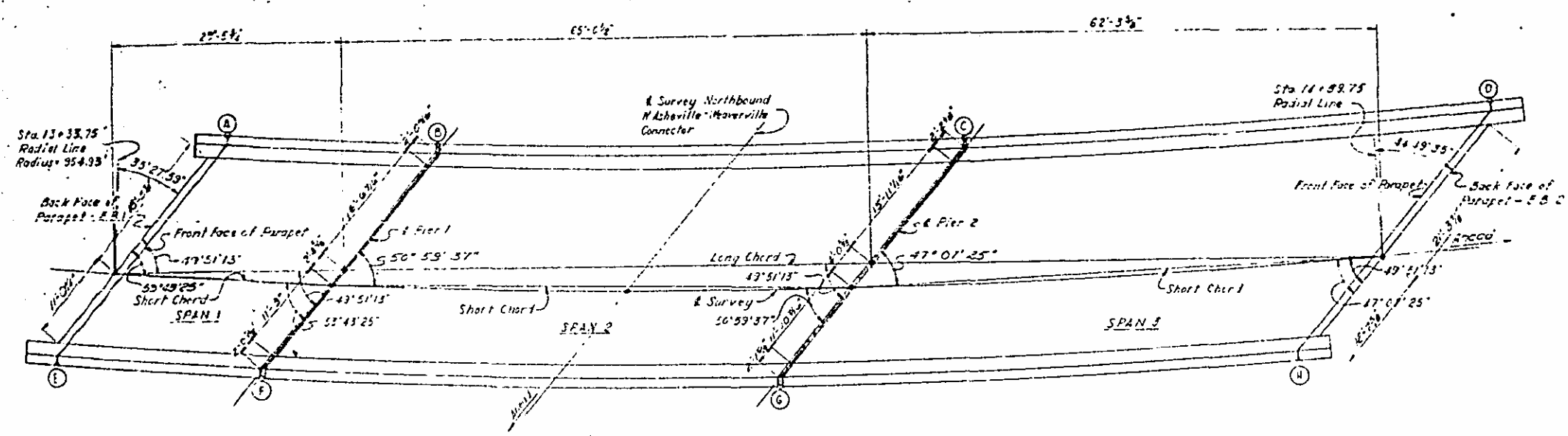
- Specifications:** Standard Specifications for Road and Structures, North Carolina State Highway Commission, Raleigh, Jan. 1, 1965.
- Design Load:** HS-20 as specified in current N.C.S.D. Specifications.
- Design Speed:** 40 mph.
- Reinforcing Steel:** All other than 100,000 psi steel shall be 60,000 psi.
- Deck:** 12" thick concrete on 12" bearing stiffeners. Deck shall be measured from natural ground line & for Pier No. 2 from the surface of the roadway cut section.
- Berm Excavation:** Crosshatched area in front of End Bent No. 2 shall be excavated by the structure contractor. See Special Provisions.
- Excavation:** The contractor is required to excavate completely through the fill at End Bent No. 1 before driving piles. Unexcavated structure excavation for Pier No. 1 shall be measured from natural ground line & for Pier No. 2 from the surface of the roadway cut section.
- Work Procedures:** Work is not to be started on Pier 2 until after the roadway section has been excavated by the roadway contractor.
- Excavation:** The contractor is required to excavate completely through the fill at End Bent No. 1 before driving piles. Unexcavated structure excavation for Pier No. 1 shall be measured from natural ground line & for Pier No. 2 from the surface of the roadway cut section.
- Berm Excavation:** Crosshatched area in front of End Bent No. 2 shall be excavated by the structure contractor. See Special Provisions.

ESTIMATE OF QUANTITIES									
	Concrete (cu yd)	Reinforcing Steel (lbs)	Formwork (sq ft)	Bar Steel (lbs)	Steel Plates (sq ft)	Steel Piles (lb)	Steel Piles (lb)	Steel Piles (lb)	Steel Piles (lb)
General Plan									
Layout & Curb Girders									
End Bent 1	23.5	2349							
Pier 1	49.5	7131							
Pier 2	26.5	3147							
End Bent 2	23.5	2771							
Superstructure	53.4	34875	97640						
Handrail			300						
Pile Record									
Concrete Elevations									
Barings									
Totals	310.2	55553	97640	300					

#248 BUNKER
 REC. 874 702 2

PROJECT NO. 83191101
 BUNCOMBE COUNTY
 STATION 63+53.39

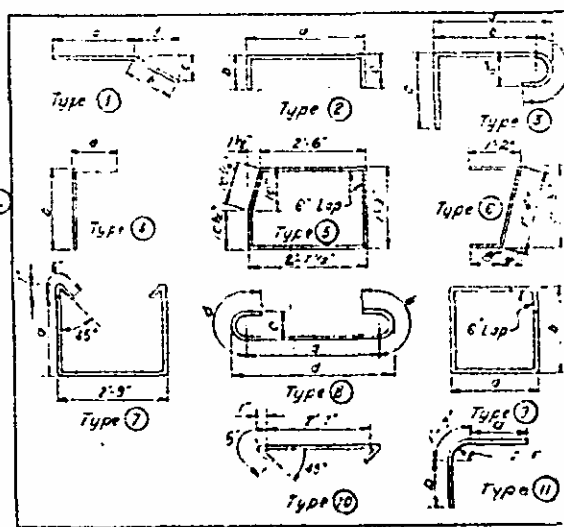
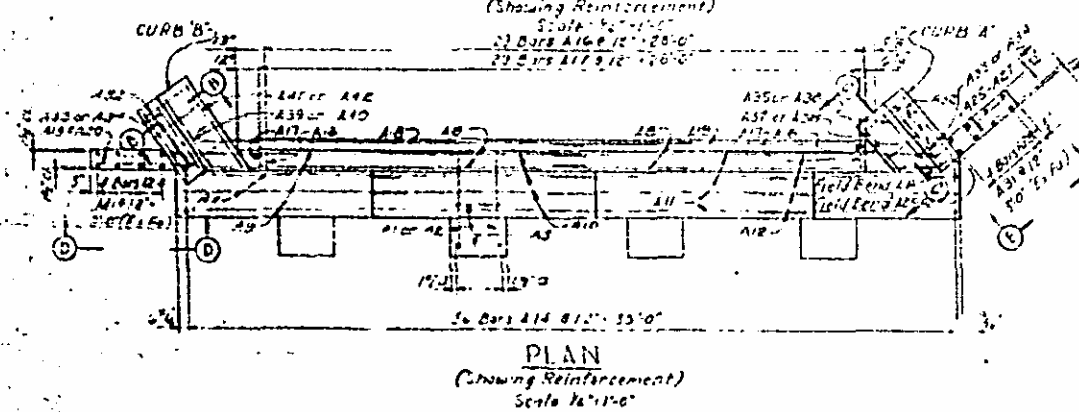
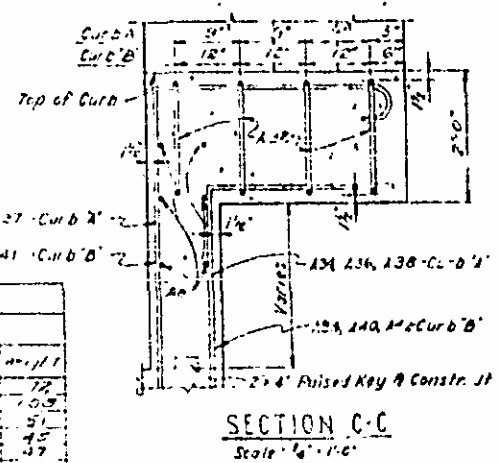
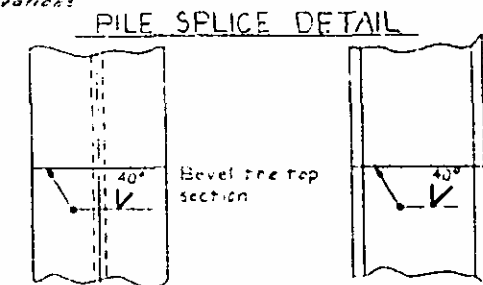
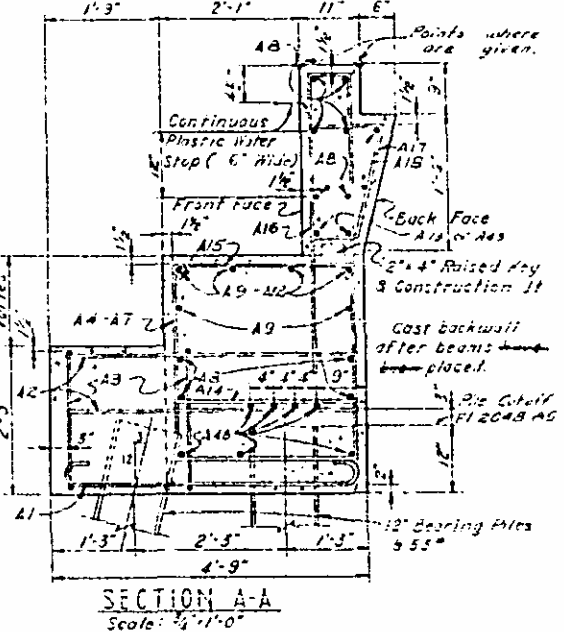
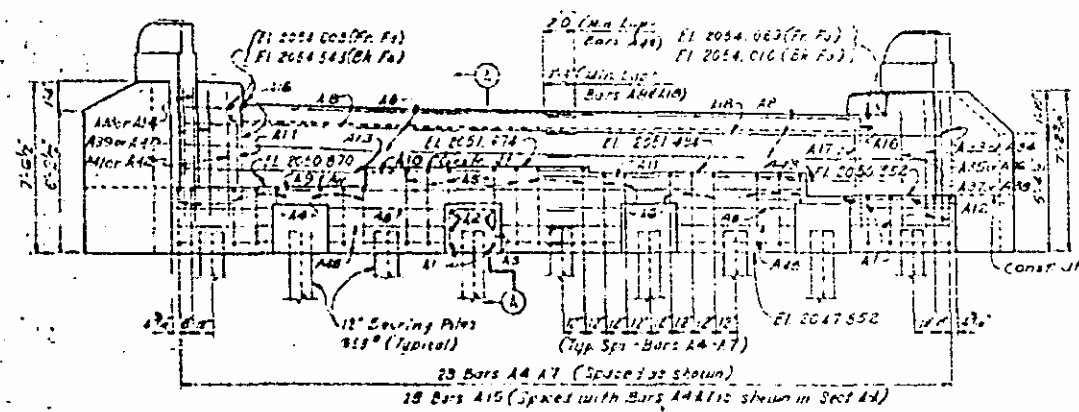
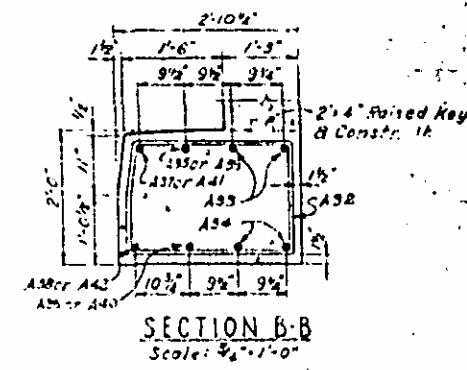
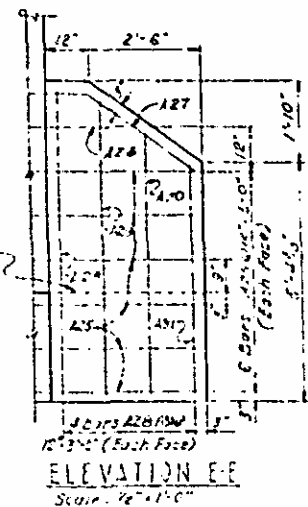
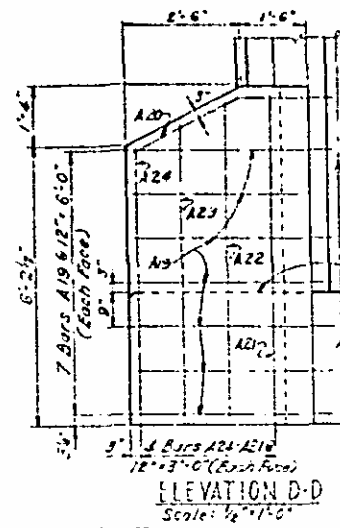
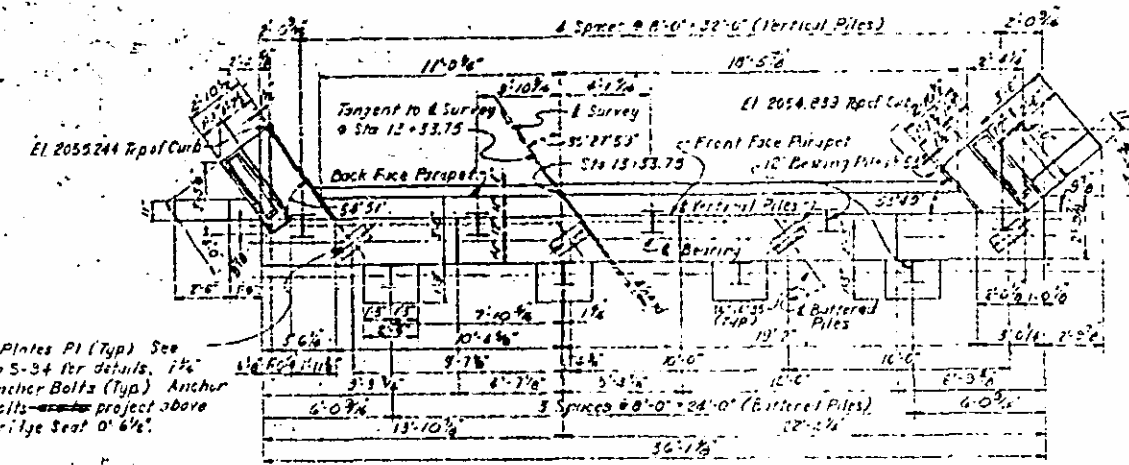
STATE OF NORTH CAROLINA	
STATE HIGHWAY COMMISSION	
W. ASHLEIGH-WEAVERVILLE CORN.	
RAMP 2-ES OVER W.A.-W. CORN.	
3 SPAN DECK-BEAM BRIDGE	
GENERAL PLAN	
SCALE 1" = 10'	
5-44	110



PROJECT NO. 8.319110
 BUNCOMBE COUNTY
 STATION 63+53.34

STATE OF NORTH CAROLINA	
STATE HIGHWAY COMMISSION	
RALEIGH	
W. ASHEVILLE-WEAVERVILLE CONN.	
RAMP 2-ES over N.W. CONN.	
3 SPAN DECK I-BEAM BRIDGE	
LAYOUT AND CURB OFFSETS	
SCALE AS SHOWN	
S-45	
110	

SPECIAL INSTRUCTIONS
 1. ALL DIMENSIONS ARE IN FEET AND INCHES.
 2. ALL ANGLES ARE IN DEGREES AND MINUTES.
 3. ALL CURB OFFSETS ARE TO BE MAINTAINED.
 4. ALL DIMENSIONS ARE TO BE MAINTAINED.
 5. ALL ANGLES ARE TO BE MAINTAINED.
 6. ALL CURB OFFSETS ARE TO BE MAINTAINED.
 7. ALL DIMENSIONS ARE TO BE MAINTAINED.
 8. ALL ANGLES ARE TO BE MAINTAINED.
 9. ALL CURB OFFSETS ARE TO BE MAINTAINED.
 10. ALL DIMENSIONS ARE TO BE MAINTAINED.



BILL OF REINFORCEMENT

Bar	Number	Size	Type	Length	Weight	Notes
A1	1	#4	1	6'-0"	1.10	
A2	1	#4	1	6'-0"	1.10	
A3	1	#4	1	6'-0"	1.10	
A4	1	#4	1	6'-0"	1.10	
A5	1	#4	1	6'-0"	1.10	
A6	1	#4	1	6'-0"	1.10	
A7	1	#4	1	6'-0"	1.10	
A8	1	#4	1	6'-0"	1.10	
A9	1	#4	1	6'-0"	1.10	
A10	1	#4	1	6'-0"	1.10	
A11	1	#4	1	6'-0"	1.10	
A12	1	#4	1	6'-0"	1.10	
A13	1	#4	1	6'-0"	1.10	
A14	1	#4	1	6'-0"	1.10	
A15	1	#4	1	6'-0"	1.10	
A16	1	#4	1	6'-0"	1.10	
A17	1	#4	1	6'-0"	1.10	
A18	1	#4	1	6'-0"	1.10	
A19	1	#4	1	6'-0"	1.10	
A20	1	#4	1	6'-0"	1.10	
A21	1	#4	1	6'-0"	1.10	
A22	1	#4	1	6'-0"	1.10	
A23	1	#4	1	6'-0"	1.10	
A24	1	#4	1	6'-0"	1.10	
A25	1	#4	1	6'-0"	1.10	
A26	1	#4	1	6'-0"	1.10	
A27	1	#4	1	6'-0"	1.10	
A28	1	#4	1	6'-0"	1.10	
A29	1	#4	1	6'-0"	1.10	
A30	1	#4	1	6'-0"	1.10	
A31	1	#4	1	6'-0"	1.10	
A32	1	#4	1	6'-0"	1.10	
A33	1	#4	1	6'-0"	1.10	
A34	1	#4	1	6'-0"	1.10	
A35	1	#4	1	6'-0"	1.10	
A36	1	#4	1	6'-0"	1.10	
A37	1	#4	1	6'-0"	1.10	
A38	1	#4	1	6'-0"	1.10	
A39	1	#4	1	6'-0"	1.10	
A40	1	#4	1	6'-0"	1.10	
A41	1	#4	1	6'-0"	1.10	
A42	1	#4	1	6'-0"	1.10	
A43	1	#4	1	6'-0"	1.10	
A44	1	#4	1	6'-0"	1.10	
A45	1	#4	1	6'-0"	1.10	
A46	1	#4	1	6'-0"	1.10	
A47	1	#4	1	6'-0"	1.10	
A48	1	#4	1	6'-0"	1.10	
A49	1	#4	1	6'-0"	1.10	
A50	1	#4	1	6'-0"	1.10	
A51	1	#4	1	6'-0"	1.10	
A52	1	#4	1	6'-0"	1.10	
A53	1	#4	1	6'-0"	1.10	
A54	1	#4	1	6'-0"	1.10	
A55	1	#4	1	6'-0"	1.10	
A56	1	#4	1	6'-0"	1.10	
A57	1	#4	1	6'-0"	1.10	
A58	1	#4	1	6'-0"	1.10	
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A60	1	#4	1	6'-0"	1.10	
A61	1	#4	1	6'-0"	1.10	
A62	1	#4	1	6'-0"	1.10	
A63	1	#4	1	6'-0"	1.10	
A64	1	#4	1	6'-0"	1.10	
A65	1	#4	1	6'-0"	1.10	
A66	1	#4	1	6'-0"	1.10	
A67	1	#4	1	6'-0"	1.10	
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A69	1	#4	1	6'-0"	1.10	
A70	1	#4	1	6'-0"	1.10	
A71	1	#4	1	6'-0"	1.10	
A72	1	#4	1	6'-0"	1.10	
A73	1	#4	1	6'-0"	1.10	
A74	1	#4	1	6'-0"	1.10	
A75	1	#4	1	6'-0"	1.10	
A76	1	#4	1	6'-0"	1.10	
A77	1	#4	1	6'-0"	1.10	
A78	1	#4	1	6'-0"	1.10	
A79	1	#4	1	6'-0"	1.10	
A80	1	#4	1	6'-0"	1.10	
A81	1	#4	1	6'-0"	1.10	
A82	1	#4	1	6'-0"	1.10	
A83	1	#4	1	6'-0"	1.10	
A84	1	#4	1	6'-0"	1.10	
A85	1	#4	1	6'-0"	1.10	
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A88	1	#4	1	6'-0"	1.10	
A89	1	#4	1	6'-0"	1.10	
A90	1	#4	1	6'-0"	1.10	
A91	1	#4	1	6'-0"	1.10	
A92	1	#4	1	6'-0"	1.10	
A93	1	#4	1	6'-0"	1.10	
A94	1	#4	1	6'-0"	1.10	
A95	1	#4	1	6'-0"	1.10	
A96	1	#4	1	6'-0"	1.10	
A97	1	#4	1	6'-0"	1.10	
A98	1	#4	1	6'-0"	1.10	
A99	1	#4	1	6'-0"	1.10	
A100	1	#4	1	6'-0"	1.10	

BILL OF MATERIAL

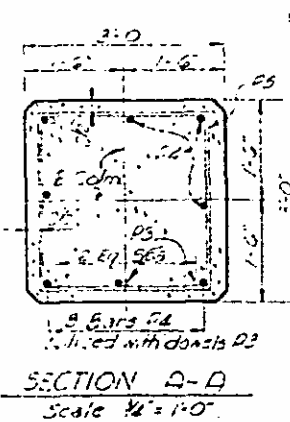
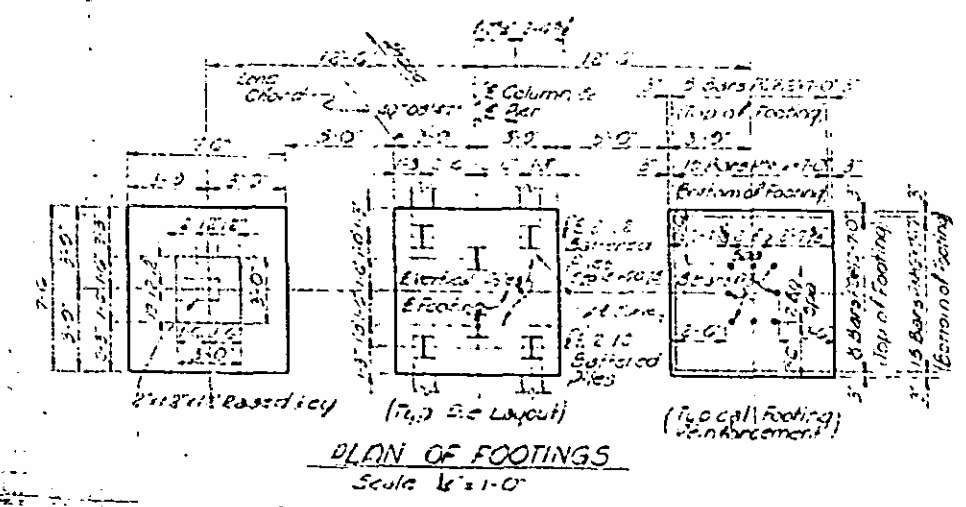
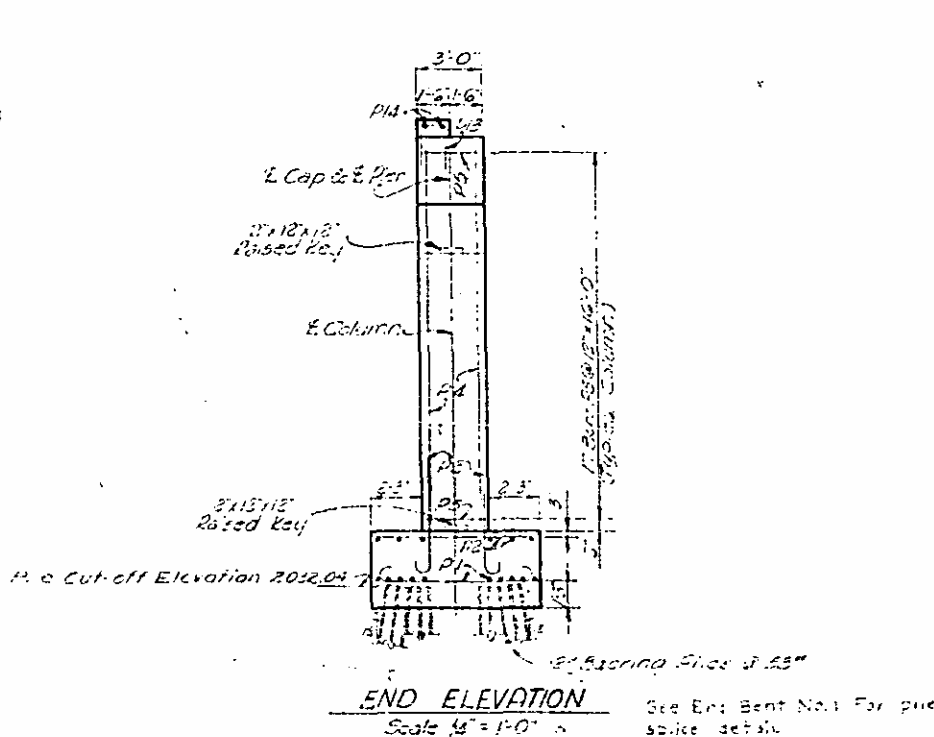
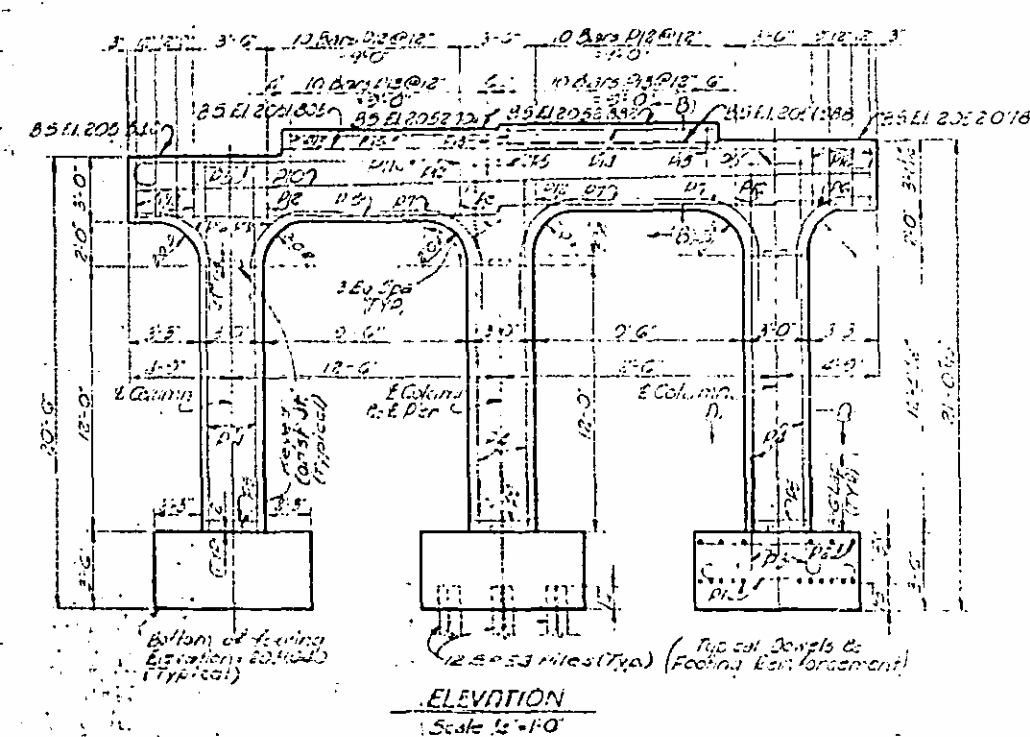
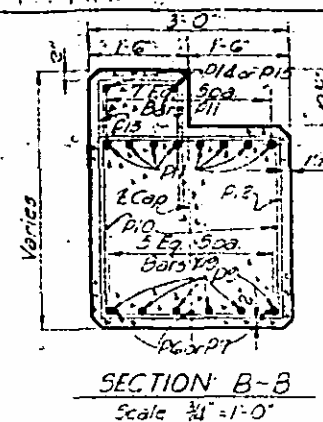
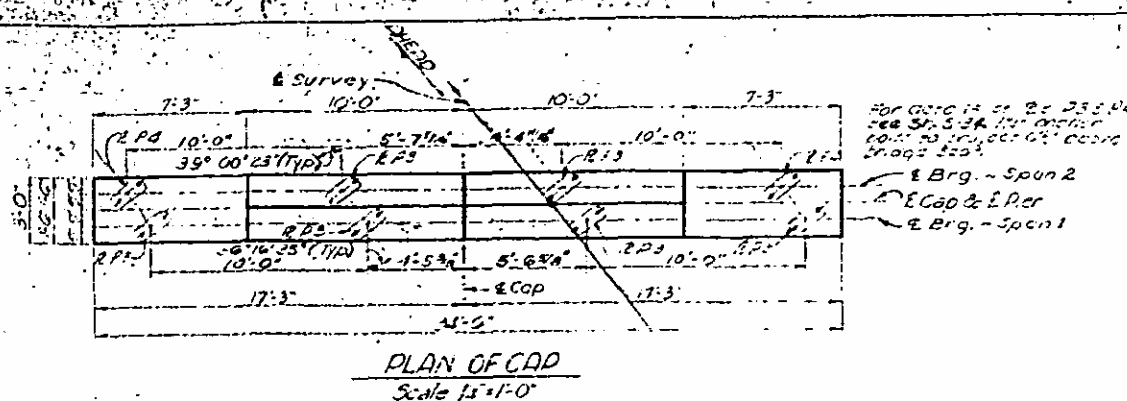
PROJECT NO. 63131101
BUNCOMBE COUNTY
STATION 63+53.34

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

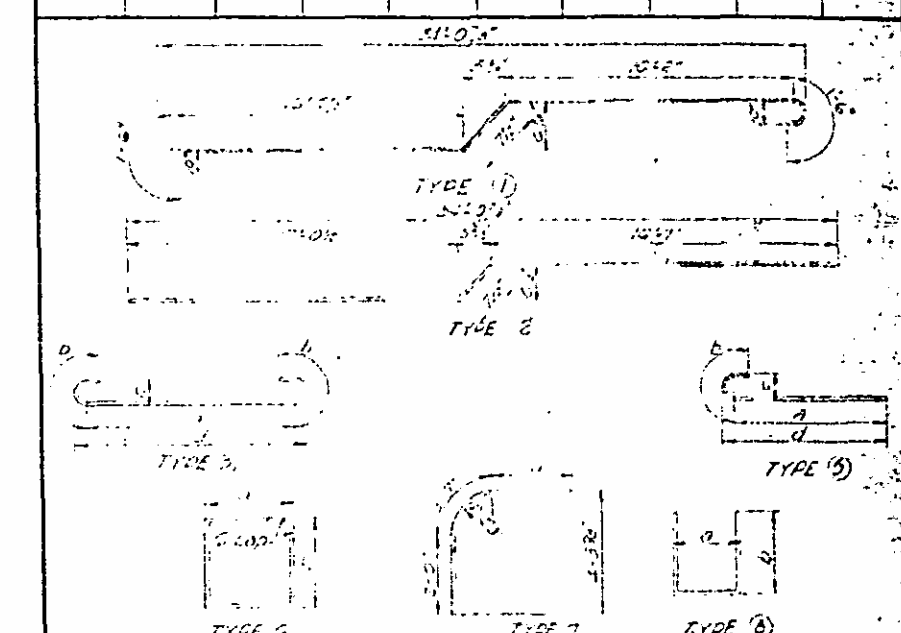
W ASHEVILLE-WEAVERVILLE CONN.
RAMP 2-ES over NB WA-W CONN.
3 SPAN DECK I-BEAM BRIDGE

END OF PT 1
SCALE AS SHOWN

Notes:
For details of End Posts see Sht 5-29.



BILL OF REINFORCEMENT									
Bar	Number	Size	Type	Length	a	b	c	d	Weight
P1	90	#6	(S)	3'-5"	6'-5"	1'-0"	0'-6"	7'-8"	1173
D1	45	#6	Str.	7'-8"					517
D2	24	#11	(S)	7'-0"	5'-0"	2'-0"	1'-1 1/2"	5'-6"	893
D3	24	#11	Str.	16'-9"					2136
D4	51	#4	(S)	11'-4"	2'-1"	2'-1"			346
D5	6	#5	(S)	9'-5"	1'-1"	2'-1"			42
D7	12	#5	(S)	7'-7"	2'-0"				95
D8	12	#5	(S)	6'-6"	2'-0"	2'-0"			83
D9	6	#1	(S)	14'-5"					42
D10	2	#5	Str.	34'-2"					71
D11	3	#5	(S)	16'-1"					77
D12	24	#5	(S)	11'-10"	2'-7"	2'-5"			316
D13	10	#5	(S)	6'-1"	1'-2"	2'-5"			27
D14	3	#5	(S)	9'-8"					27
D15	2	#5	(S)	11'-10"					52



BILL OF MATERIALS	
Class A Concrete	495 Cu. Yds.
Reinforcing Steel	7131 Lbs.
Unreinforced concrete foundation	976 Cu. Yds.
16 Bars	4659 Lbs. Lin. Ft.

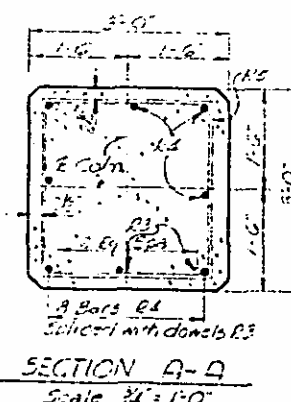
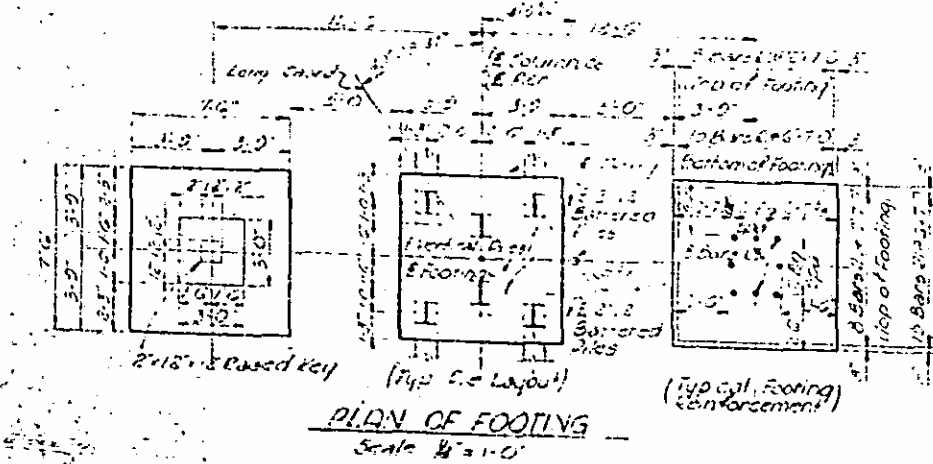
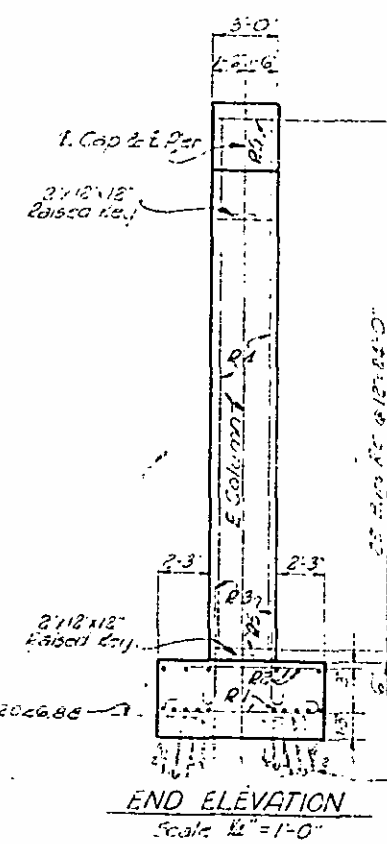
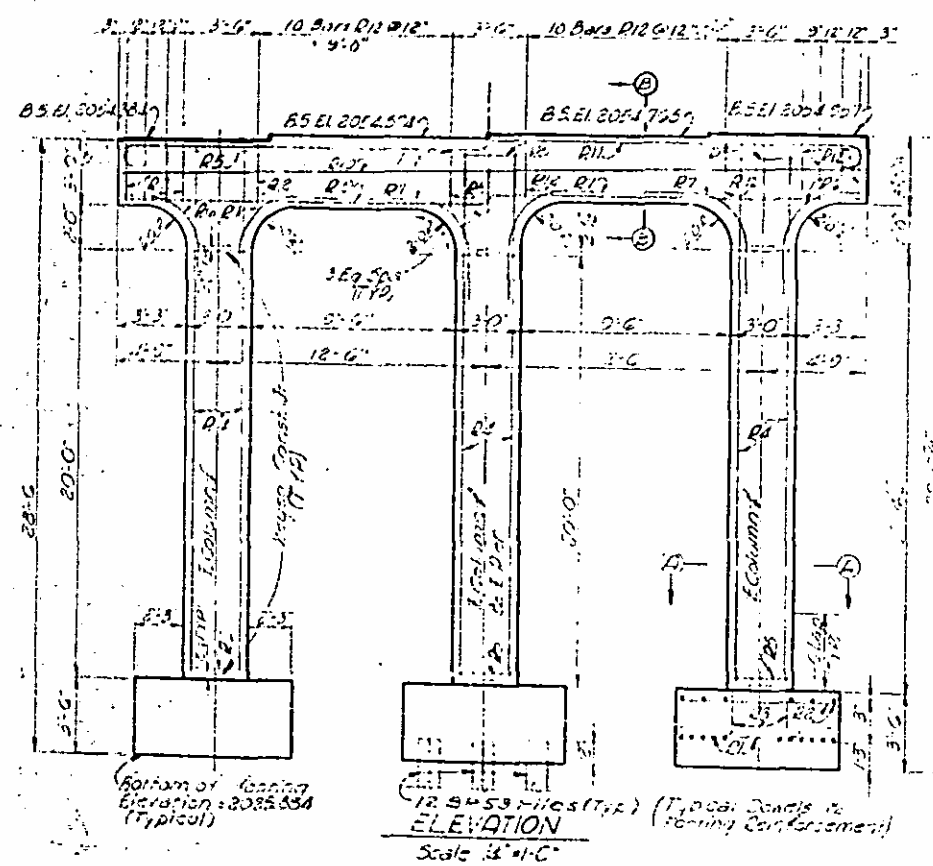
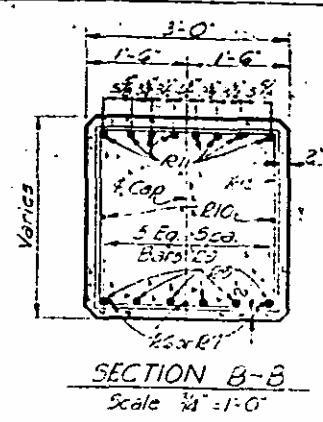
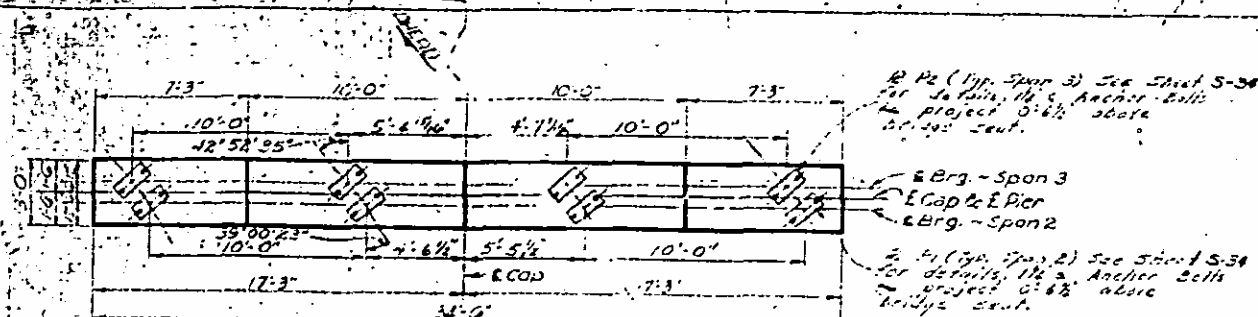
PROJECT NO. 8.319110J
BUNCOMBE COUNTY
STATION 63+53.34

STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
RALEIGH

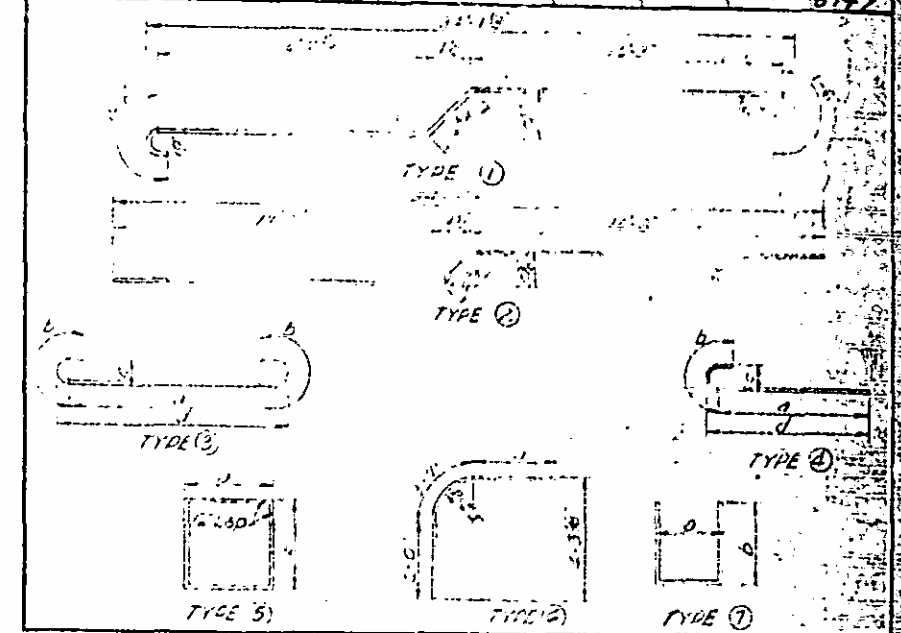
W. ASHEVILLE-WEAVERVILLE CONN.
RAMP 2-ES over NB WA-W CONN.
3 SPAN DECK I-BEAM BRIDGE

Plan 1
SCALE AS SHOWN

5'-47"
110'



BILL OF REINFORCEMENT									
Bar	Number	Size	Type	Length	Area	Weight	Volume	Cost	Notes
R1	50	#6	(3)	5'-9"	2'-5"	1'-0"	0'-6"	7'-2"	177.4
R2	48	#6	(3)	7'-2"	5'-0"	2'-0"	1'-10"	5'-6"	517.4
R3	24	#11	(3)	7'-0"	5'-0"	2'-0"	1'-10"	5'-6"	698.4
R4	24	#11	(3)	7'-0"	5'-0"	2'-0"	1'-10"	5'-6"	698.4
R5	15	#12	(3)	11'-4"	2'-7"	2'-1"			3167.4
R6	6	#5	(3)	6'-5"	1'-1"				568.4
R7	12	#5	(3)	7'-1"	2'-0"				42.4
R8	12	#5	(3)	7'-1"	2'-0"				42.4
R9	6	#5	(3)	6'-5"	2'-9"	2'-0"			108.4
R10	6	#5	(3)	6'-5"	2'-9"	2'-0"			108.4
R11	8	#5	(3)	11'-5"					71.4
R12	8	#5	(3)	11'-5"					71.4
R13	28	#5	(3)	11'-5"	2'-5"	2'-9"			381.4

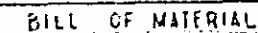
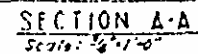
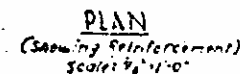
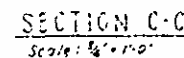
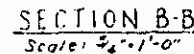
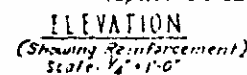
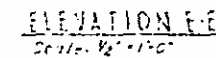
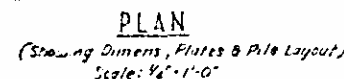


BILL OF MATERIALS	
Clear A. Concrete	56.1 cu. yds.
Reinforcing Steel	5147 lbs.
Unreinforced Structure, Excavation	112.24 cu. yds.
16" Piles	330.00 ft.

PROJECT NO. 8.319101
 BUNCOMBE COUNTY
 STATION 63+53.34

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 RALEIGH
 W. ASHEVILLE-WEAVERVILLE CONN.
 RAMP 2-ES over NB WA-W CONN.
 3 SPAN DECK BEAM BRIDGE
 PIER 2
 SCALE AS SHOWN
 5-18
 110

CC. R. 17. 4-15-65
 J. 10. 4-15-65



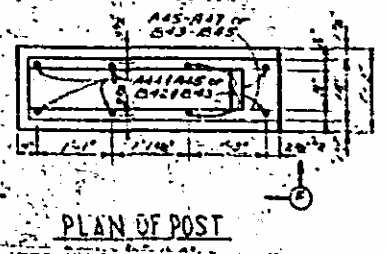
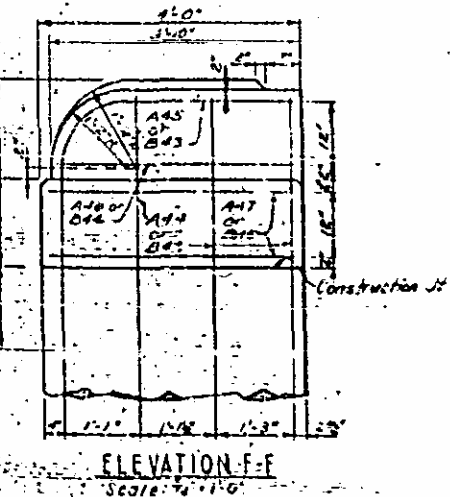
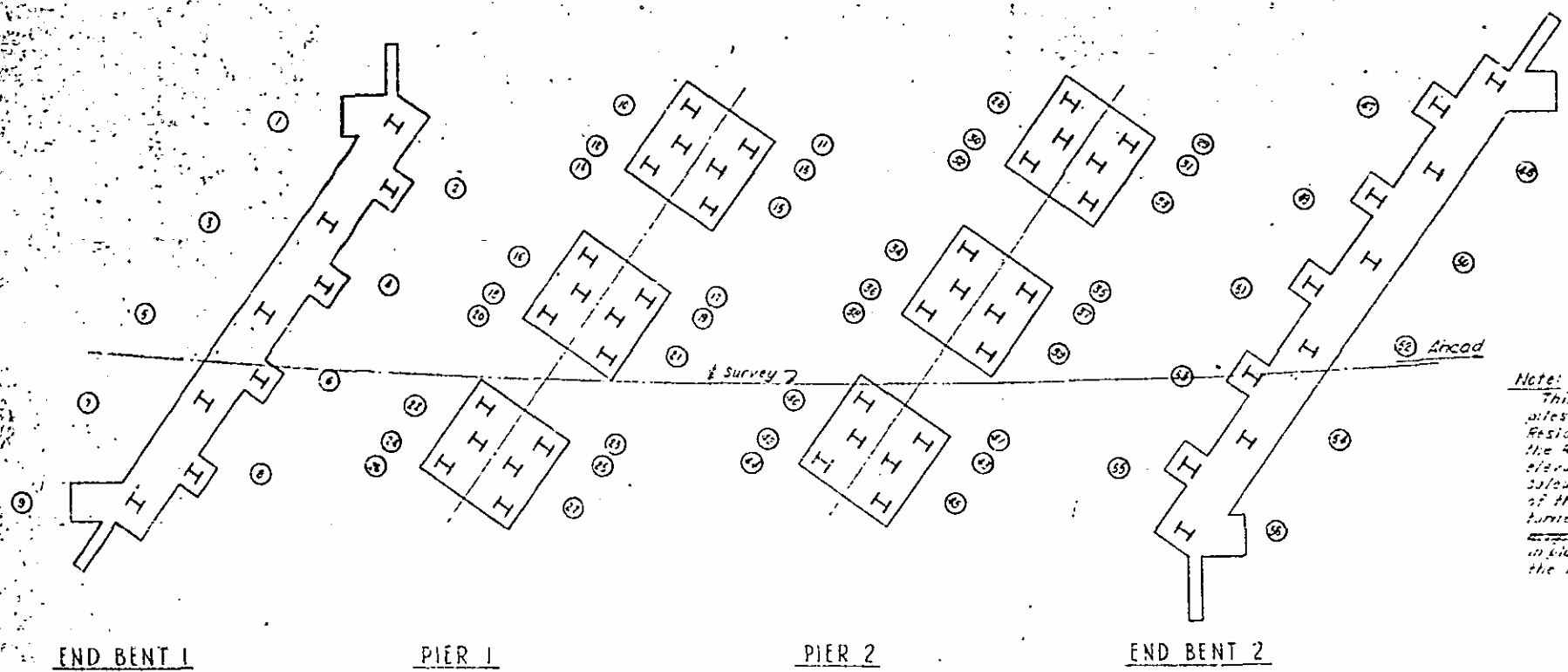
SCALE AS SHOWN

S-51

116-2

PILE RECORD				
PILE NO.	Cut-off Elevation as shown on Plans	Tip of Pile Elevation	Length of Pile in Place (Lift-FT)	Calculated Bearing Capacity (Tons)
END BENT 1				
1	2003.35	1999.377	43.97	100.7
2		2003.266	45.74	100.7
3		2000.183	48.87	120.0
4		1998.85	49.0	120.0
5		2008.35	45.6	120.0
6		2002.933	45.11	75.0
7		2008.10	40.97	100.7
8		2000.016	48.10	66.7
9		2007.014	41.10	120.0
PIER 1				
10	2007.04	2007.04	25.0	75.0
11		2007.04	25.0	75.0
12		2007.04	25.0	75.0
13		2007.04	25.0	75.0
14		2007.04	25.0	75.0
15		2009.79	22.3	100.0
16		2007.04	25.0	75.0
17		2007.04	25.0	75.0
18		2007.04	25.0	75.0
19		2007.04	25.0	75.0
20		2007.04	25.0	75.0
21		2007.04	25.0	75.0
22		2007.04	25.0	75.0
23		2007.04	25.0	75.0
24		2007.04	25.0	75.0
25		2007.04	25.0	75.0
26		2007.04	25.0	75.0
27		2007.04	25.0	75.0
PIER 2				
28	2009.463	2009.463	17.5	75.0
29		2010.130	18.9	120.7
30		2014.046	15.18	152.7
31		2011.88	15.18	152.7
32		2009.180	17.0	100.0
33		2010.180	16.0	120.7
34		2007.942	18.11	132.7
35		2008.046	18.10	85.7
36		2007.963	18.11	60.0
37		2010.796	18.0	132.7
38		2007.88	18.0	132.7
39		2008.88	18.0	152.7
40		2007.046	20.4	152.7
41		2008.347	20.4	132.7
42		2005.343	20.11	132.7
43		2008.88	21.0	132.7
44		2005.88	21.0	120.7
45		2002.447	21.4	120.7
END BENT 2				
46	2003.09	2003.09	40.0	152.7
47		2024.673	28.5	152.7
48		2013.58	31.67	152.7
49		2023.173	31.1	152.7
50		2023.008	31.1	152.7
51		2010.09	39.0	152.7
52		2023.923	31.2	152.7
53		2018.673	34.5	120.0
54		2014.090	41.0	120.0
55		2020.506	41.0	120.0
56		2022.673	32.5	152.7

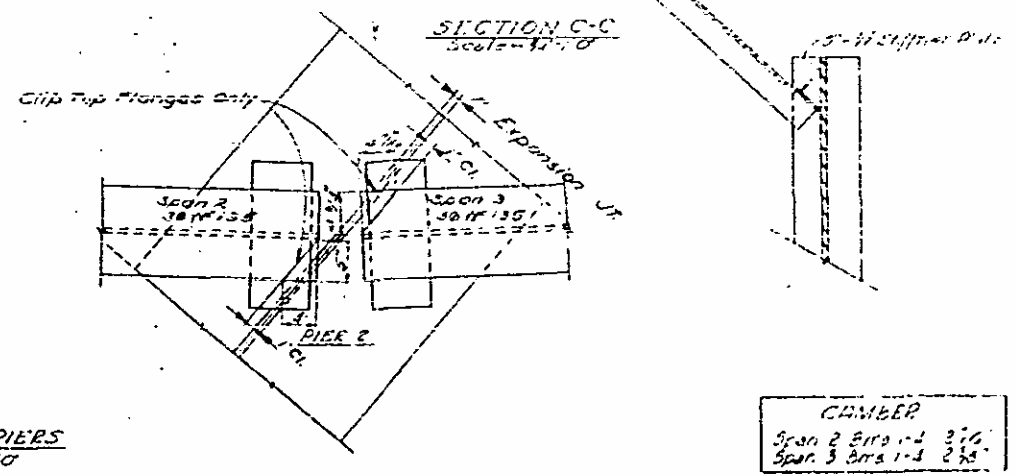
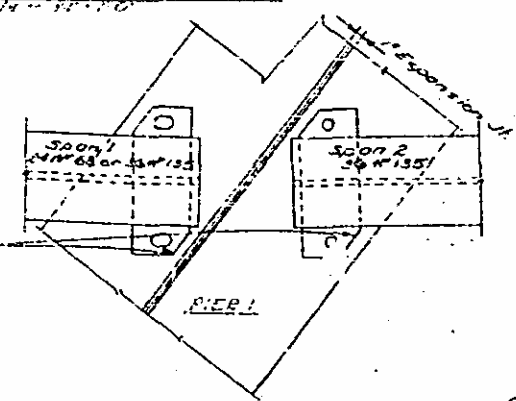
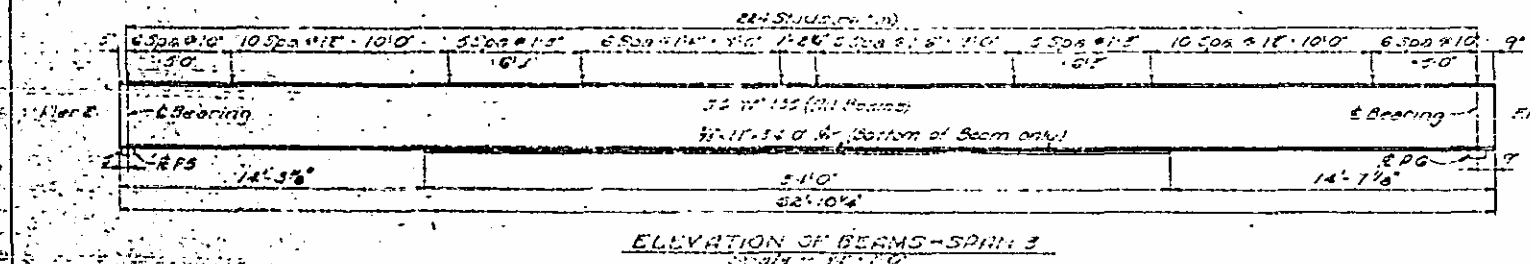
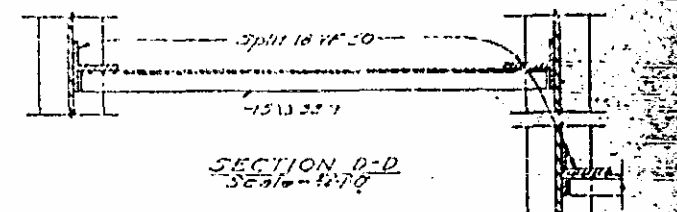
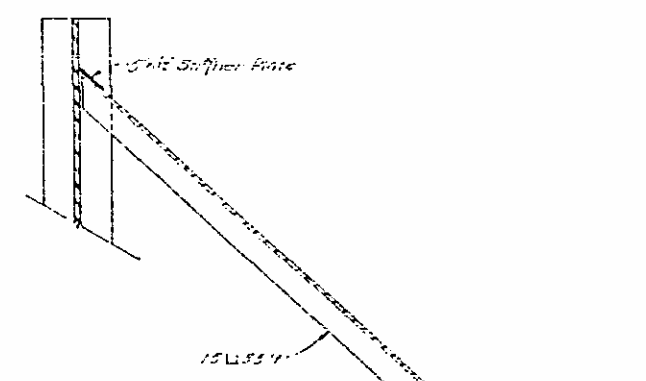
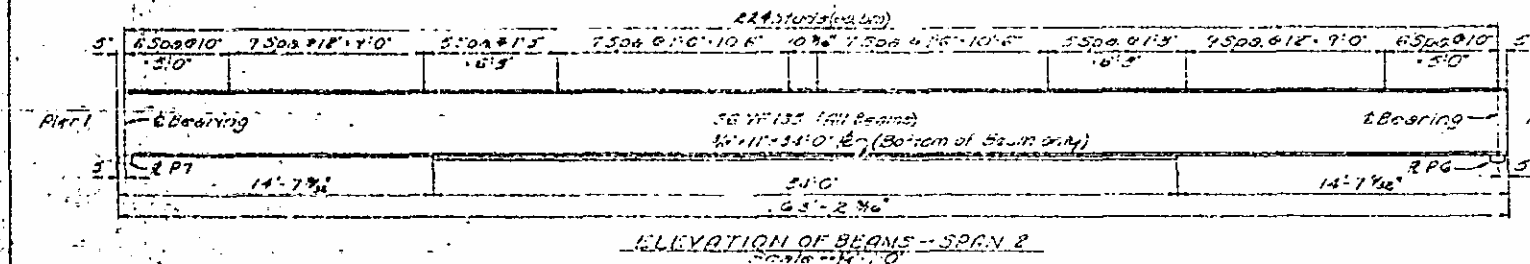
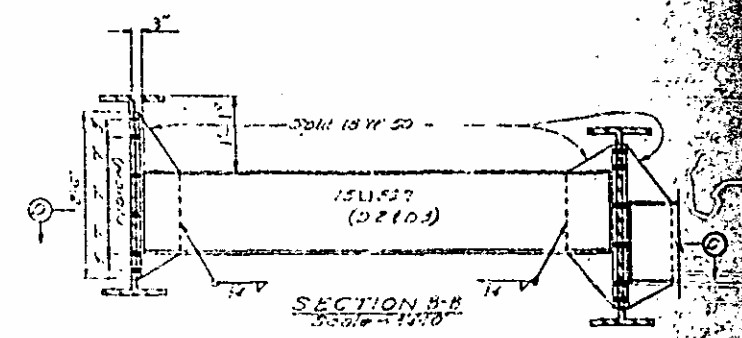
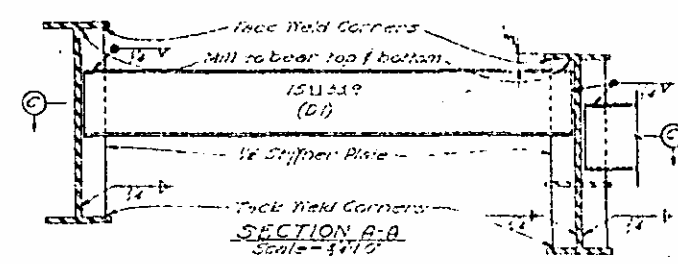
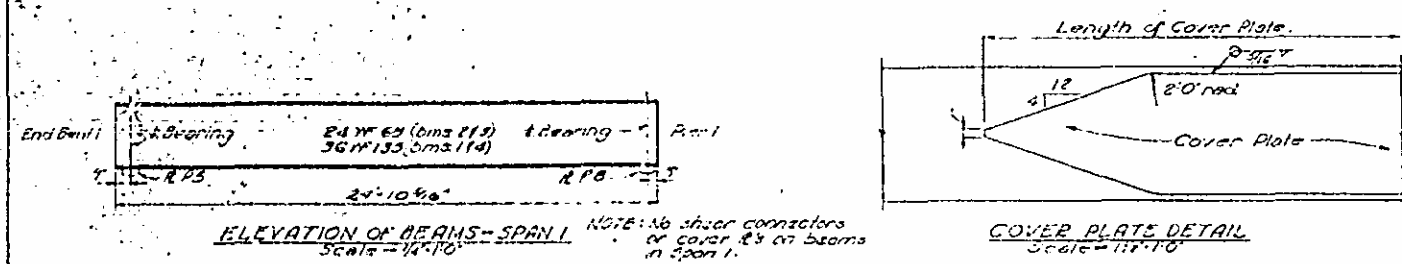
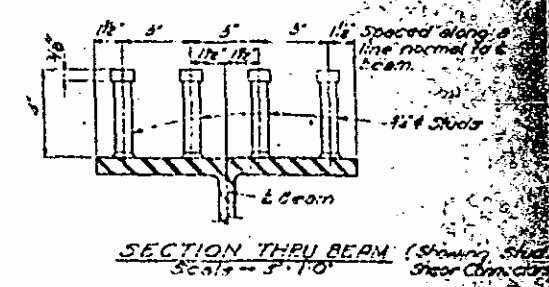
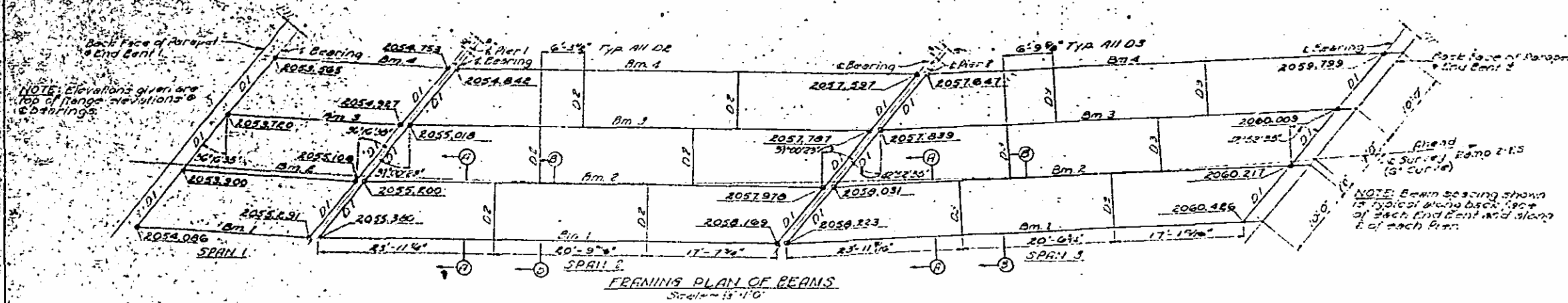
Note: This sheet does not replace other records on piles kept and submitted by the Resident Engineer. After all piles have been driven, the Resident Engineer record the tip of pile elevation as driven, length of pile in place, and calculated bearing capacity of each pile. One copy of this sheet with above information must be returned to the Bridge Engineer so that the record placed on the original plans. Length of pile in place shown hereon is the actual length of pile in the finished structure below the cut-off elevation.



PROJECT NO. 83191101
 BUNCOMBE COUNTY
 STATION 63+53.34

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 RALEIGH
 W. ASHEVILLE-WEAVERVILLE CONN.
 RAMP 2-ES over NB WA-W CONN.
 3 SPAN DECK I-BEAM BRIDGE
 PILE RECORD & END BENTS 1 & 2
 SCALE AS SHOWN

S-54
 110



NOTE: 1/2" high strength bolts in accordance with specifications used in field connections.

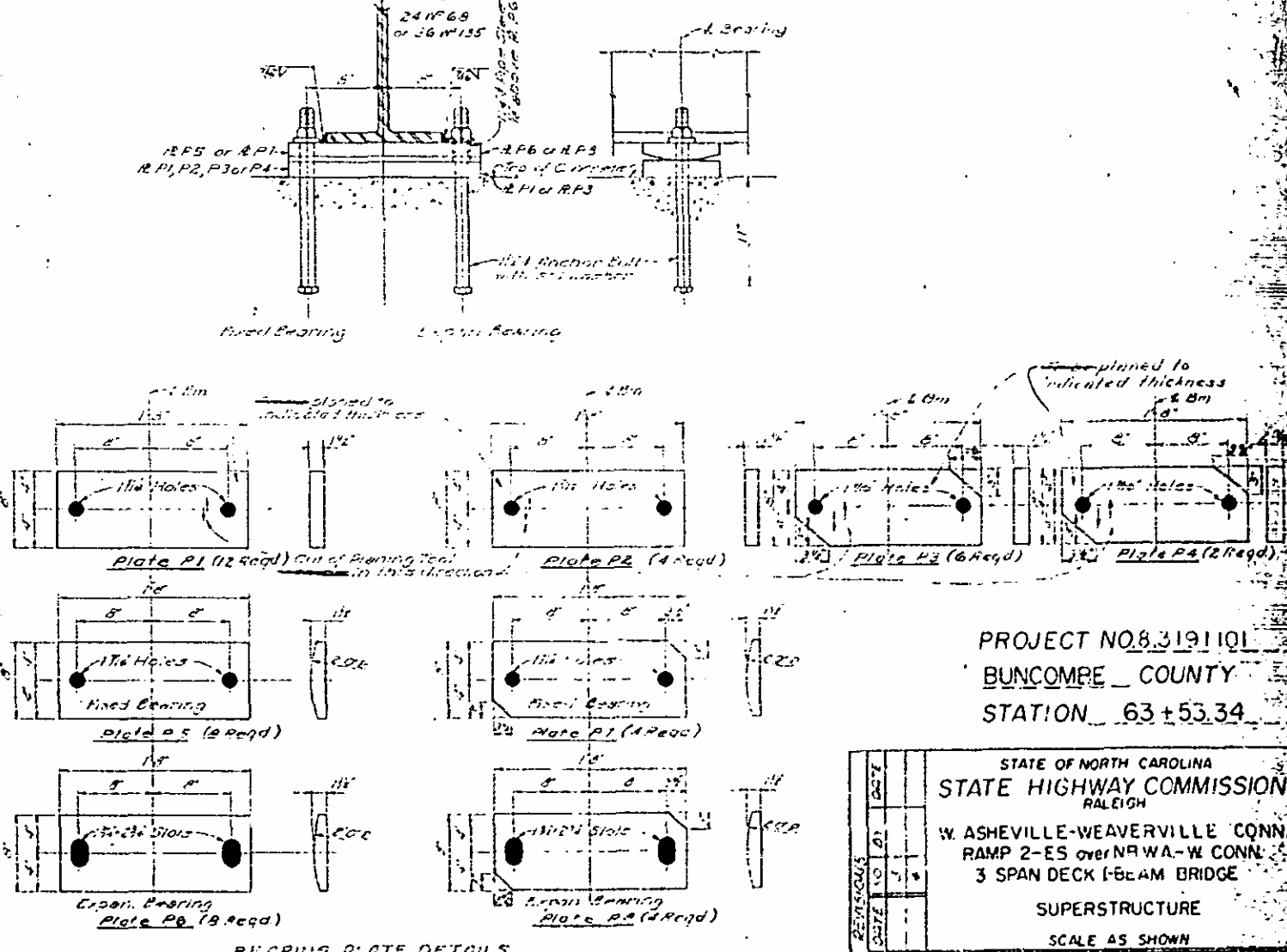
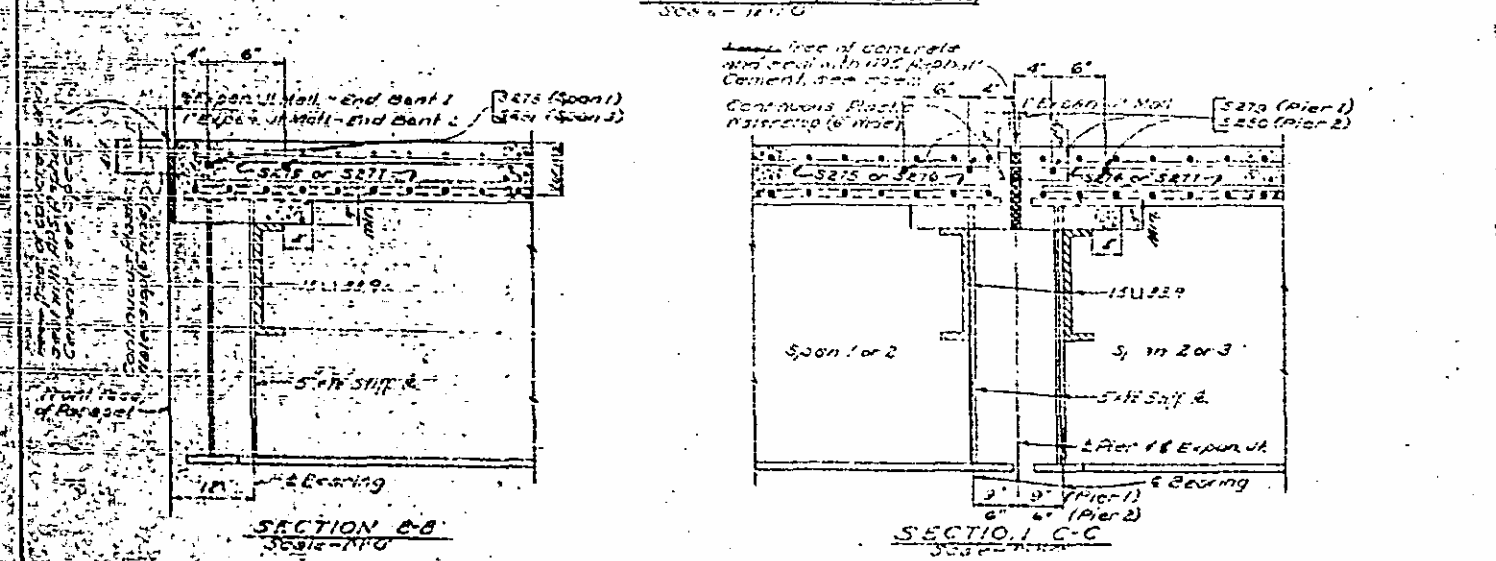
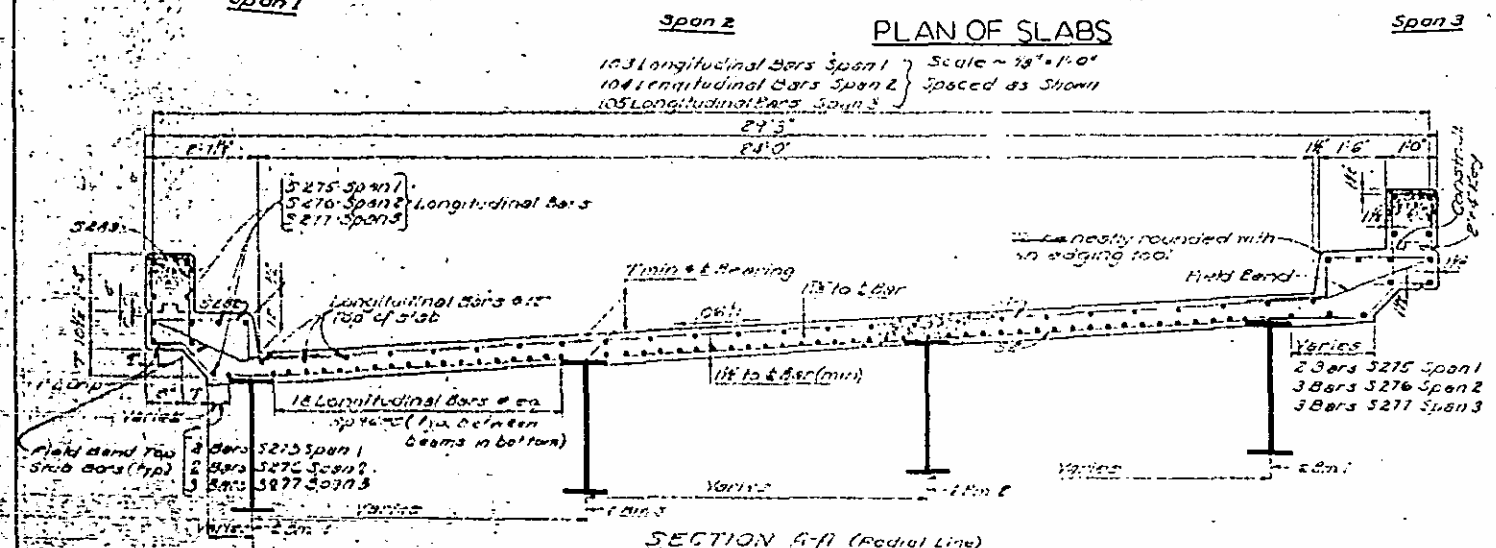
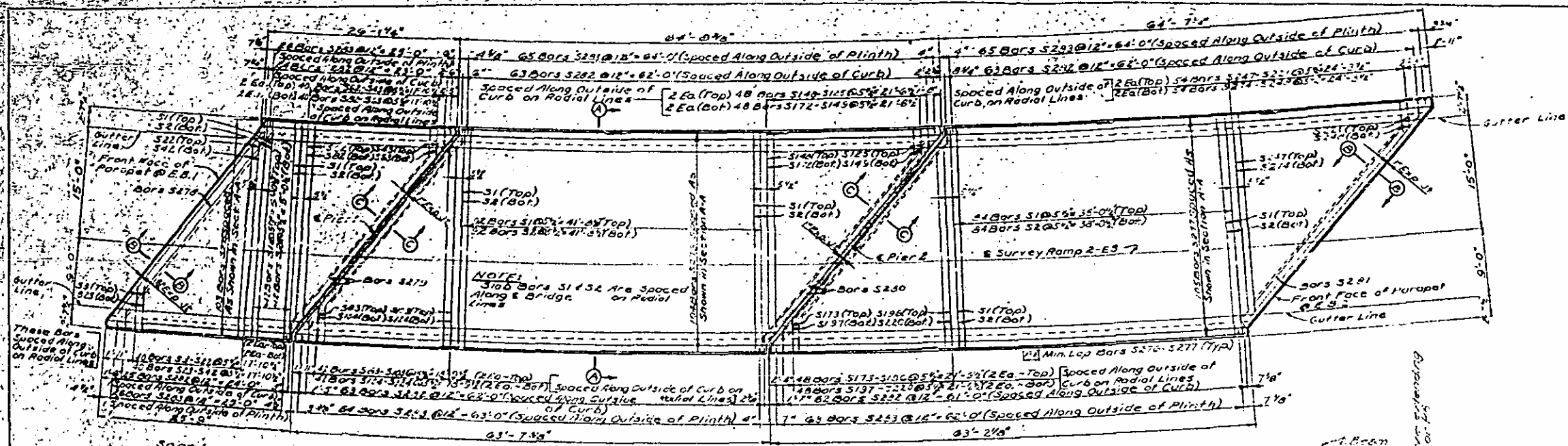
PROJECT NO. 8319
 BUNCOMBE COUNTY
 STATION 63+53.34

STATE OF NORTH CAROLINA	
STATE HIGHWAY COMMISSION	
RALEIGH	
W. ASHEVILLE-WEAVERVILLE CONN.	
RAMP 2-ES over NB WA-W CONN.	
3 SPAN DECK I-BRIDGE	
SUPERSTRUCTURE	
SCALE AS SHOWN	

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 7-55

CAMBER
 Span 2 Bms 1-4 3/4"
 Span 3 Bms 1-4 2 1/2"

S-56
 110



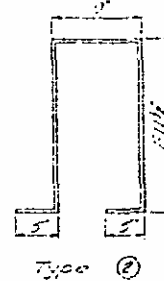
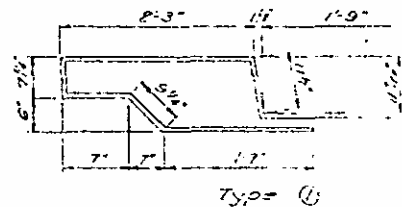
PROJECT NO. 8.319101
 BUNCOMPE COUNTY
 STATION 63+53.34

STATE OF NORTH CAROLINA
 HIGHWAY COMMISSION
 RALEIGH
 W. ASHEVILLE-WEAVERVILLE CONN.
 RAMP 2-ES over N.W.A.-W. CONN.
 3 SPAN DECK I-BEAM BRIDGE
 SUPERSTRUCTURE
 SCALE AS SHOWN

REVISIONS	DATE	BY	CHKD
1	10/1/78	J. B. BROWN	J. B. BROWN
2	10/1/78	J. B. BROWN	J. B. BROWN
3	10/1/78	J. B. BROWN	J. B. BROWN

BILL OF REINFORCEMENT

Bar No.	Size	Type	Length	Weight	Bar No.	Size	Type	Length	Weight	Bar No.	Size	Type	Length	Weight	Bar No.	Size	Type	Length	Weight			
S1	100	45	29'-0"	5606	S78	2	45	Str.	20'-6"	43	S155	2	45	Str.	7'-2"	15	S232	2	45	Str.	12'-9"	27
S2	100	45	26'-6"	5196	S79	2	45	Str.	21'-9"	45	S156	2	45	Str.	8'-3"	17	S233	2	45	Str.	13'-9"	29
S3	2	45	3'-0"	6	S80	2	45	Str.	22'-7"	48	S157	2	45	Str.	9'-4"	19	S234	2	45	Str.	11'-0"	31
S4	2	45	4'-3"	9	S81	2	45	Str.	24'-2"	50	S158	2	45	Str.	10'-4"	22	S235	2	45	Str.	15'-7"	33
S5	2	45	5'-6"	11	S82	2	45	Str.	25'-5"	53	S159	2	45	Str.	11'-5"	24	S236	2	45	Str.	16'-2"	34
S6	2	45	6'-9"	14	S83	2	45	Str.	27'-11"	6	S160	2	45	Str.	12'-6"	26	S237	2	45	Str.	17'-6"	37
S7	2	45	8'-0"	17	S84	2	45	Str.	27'-7"	9	S161	2	45	Str.	13'-7"	28	S238	2	45	Str.	18'-5"	38
S8	2	45	9'-3"	19	S85	2	45	Str.	28'-3"	11	S162	2	45	Str.	14'-7"	30	S239	2	45	Str.	19'-4"	40
S9	2	45	10'-6"	22	S86	2	45	Str.	28'-5"	13	S163	2	45	Str.	15'-9"	33	S240	2	45	Str.	20'-3"	42
S10	2	45	11'-9"	25	S87	2	45	Str.	27'-8"	16	S164	2	45	Str.	16'-9"	35	S241	2	45	Str.	21'-3"	44
S11	2	45	13'-0"	27	S88	2	45	Str.	28'-10"	18	S165	2	45	Str.	17'-10"	37	S242	2	45	Str.	22'-2"	46
S12	2	45	14'-3"	30	S89	2	45	Str.	10'-0"	21	S166	2	45	Str.	18'-10"	39	S243	2	45	Str.	23'-7"	49
S13	2	45	15'-6"	32	S90	2	45	Str.	11'-2"	23	S167	2	45	Str.	19'-11"	42	S244	2	45	Str.	24'-0"	50
S14	2	45	16'-9"	35	S91	2	45	Str.	12'-5"	26	S168	2	45	Str.	21'-0"	44	S245	2	45	Str.	25'-0"	52
S15	2	45	18'-0"	38	S92	2	45	Str.	13'-7"	28	S169	2	45	Str.	22'-1"	46	S246	2	45	Str.	25'-4"	54
S16	2	45	19'-3"	40	S93	2	45	Str.	14'-9"	31	S170	2	45	Str.	23'-7"	48	S247	2	45	Str.	26'-10"	56
S17	2	45	20'-6"	43	S94	2	45	Str.	15'-11"	33	S171	2	45	Str.	24'-2"	50	S248	2	45	Str.	1'-3"	5
S18	2	45	21'-9"	45	S95	2	45	Str.	17'-2"	36	S172	2	45	Str.	15'-4"	53	S249	2	45	Str.	2'-2"	5
S19	2	45	23'-0"	48	S96	2	45	Str.	18'-4"	38	S173	2	45	Str.	3'-0"	6	S250	2	45	Str.	3'-2"	7
S20	2	45	24'-3"	51	S97	2	45	Str.	19'-6"	41	S174	2	45	Str.	6'-1"	9	S251	2	45	Str.	6'-1"	9
S21	2	45	25'-6"	53	S98	2	45	Str.	20'-8"	43	S175	2	45	Str.	5'-1"	11	S252	2	45	Str.	5'-0"	10
S22	2	45	26'-10"	56	S99	2	45	Str.	21'-11"	46	S176	2	45	Str.	6'-2"	13	S253	2	45	Str.	5'-11"	12
S23	2	45	1'-9"	6	S100	2	45	Str.	23'-1"	48	S177	2	45	Str.	7'-0"	15						
S24	2	45	3'-0"	6	S101	2	45	Str.	21'-3"	51	S178	2	45	Str.	8'-2"	17						
S25	2	45	4'-3"	9	S102	2	45	Str.	23'-5"	53	S179	2	45	Str.	9'-3"	19						
S26	2	45	5'-6"	11	S103	2	45	Str.	26'-7"	55	S180	2	45	Str.	10'-3"	21						
S27	2	45	6'-9"	14	S104	2	45	Str.	1'-3"	3	S181	2	45	Str.	11'-4"	24						
S28	2	45	8'-0"	17	S105	2	45	Str.	2'-10"	6	S182	2	45	Str.	12'-4"	26						
S29	2	45	9'-3"	19	S106	2	45	Str.	4'-0"	8	S183	2	45	Str.	13'-4"	28						
S30	2	45	10'-6"	22	S107	2	45	Str.	5'-2"	11	S184	2	45	Str.	14'-5"	30						
S31	2	45	11'-9"	25	S108	2	45	Str.	6'-5"	13	S185	2	45	Str.	15'-5"	32						
S32	2	45	13'-0"	27	S109	2	45	Str.	7'-7"	16	S186	2	45	Str.	16'-5"	34						
S33	2	45	14'-3"	30	S110	2	45	Str.	8'-9"	18	S187	2	45	Str.	17'-6"	37						
S34	2	45	15'-6"	32	S111	2	45	Str.	9'-11"	21	S188	2	45	Str.	18'-6"	39						
S35	2	45	16'-9"	35	S112	2	45	Str.	11'-2"	23	S189	2	45	Str.	19'-6"	41						
S36	2	45	18'-0"	38	S113	2	45	Str.	12'-4"	26	S190	2	45	Str.	20'-7"	43						
S37	2	45	19'-3"	40	S114	2	45	Str.	13'-6"	28	S191	2	45	Str.	21'-7"	45						
S38	2	45	20'-6"	43	S115	2	45	Str.	14'-8"	31	S192	2	45	Str.	22'-8"	47						
S39	2	45	21'-9"	45	S116	2	45	Str.	15'-10"	33	S193	2	45	Str.	23'-8"	49						
S40	2	45	23'-0"	48	S117	2	45	Str.	17'-1"	36	S194	2	45	Str.	24'-9"	52						
S41	2	45	24'-3"	51	S118	2	45	Str.	18'-3"	38	S195	2	45	Str.	25'-9"	54						
S42	2	45	25'-6"	53	S119	2	45	Str.	19'-5"	41	S196	2	45	Str.	16'-9"	56						
S43	2	45	3'-1"	7	S120	2	45	Str.	19'-8"	43	S197	2	45	Str.	1'-9"	1						
S44	2	45	4'-4"	9	S121	2	45	Str.	21'-10"	46	S198	2	45	Str.	2'-10"	2						
S45	2	45	5'-7"	11	S122	2	45	Str.	23'-0"	48	S199	2	45	Str.	3'-10"	3						
S46	2	45	7'-0"	15	S123	2	45	Str.	23'-4"	50	S200	2	45	Str.	1'-8"	10						
S47	2	45	8'-3"	17	S124	2	45	Str.	25'-1"	55	S201	2	45	Str.	5'-11"	12						
S48	2	45	9'-6"	20	S125	2	45	Str.	2'-1"	4	S202	2	45	Str.	6'-11"	14						
S49	2	45	10'-9"	22	S126	2	45	Str.	1'-7"	4	S203	2	45	Str.	8'-0"	17						
S50	2	45	12'-11"	25	S127	2	45	Str.	3'-2"	9	S204	2	45	Str.	9'-0"	19						
S51	2	45	13'-2"	27	S128	2	45	Str.	5'-3"	11	S205	2	45	Str.	10'-1"	21						
S52	2	45	14'-4"	30	S129	2	45	Str.	6'-4"	13	S206	2	45	Str.	11'-1"	23						
S53	2	45	15'-7"	33	S130	2	45	Str.	7'-7"	15	S207	2	45	Str.	12'-1"	25						
S54	2	45	16'-10"	35	S131	2	45	Str.	8'-9"	18	S208	2	45	Str.	13'-2"	27						
S55	2	45	18'-1"	38	S132	2	45	Str.	9'-2"	20	S209	2	45	Str.	14'-1"	30						
S56	2	45	19'-3"	40	S133	2	45	Str.	10'-7"	22	S210	2	45	Str.	15'-2"	32						
S57	2	45	20'-6"	43	S134	2	45	Str.	11'-9"	24	S211	2	45	Str.	16'-3"	34						
S58	2	45	21'-9"	45	S135	2	45	Str.	12'-8"	26	S212	2	45	Str.	17'-3"	36						



BILL OF MATERIALS FOR DECK

Reinforcing Steel, Lbs. 34,015
 Class A Concrete,

At the Contractor's option metal rail may be either Aluminum or Steel in accordance with the requirements of the general notes and the following specifications for the alternate materials; however, the Contractor is required to use the same rail material on all structures on the project for which metal rail is designated.

GENERAL NOTES

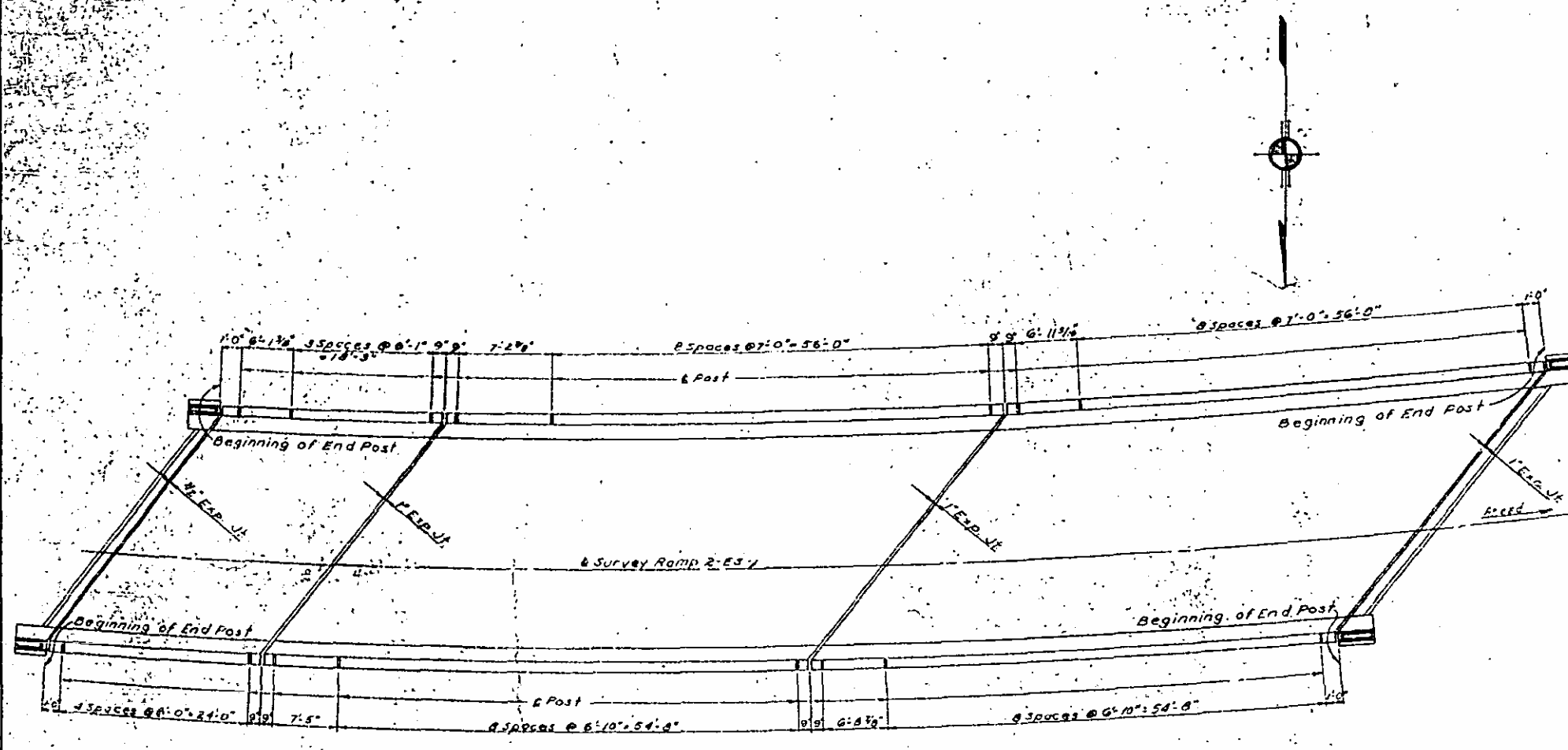
- Unless noted on the plans, maximum length of rail section ~~two~~ two panels plus "stick thru."
- End of rail to clear face of concrete End Post by 1/2".
- For double panel runs of rail, set screws ~~shall~~ set tight on center post and snug of ends to allow for expansion.
- For single panel runs, set screws ~~shall~~ set tight at one end and snug at other end.
- 3/4" Anchor bolts - hex nuts and washers ~~shall~~ be galvanized in accordance with ASTM A-153 and painted with 2 coats of aluminum paint after erection.
- Cost posts ~~free~~ as shown or as approved equal.
- Certified Mill reports ~~are~~ required for rails and posts. Shop inspection ~~is~~ not required.
- Metal Rail Posts ~~shall~~ set normal to curb grade.
- Method of measurement for Metal Rails: Unless otherwise stated, the length of Metal rails ~~shall~~ be paid for ~~on~~ the continuous horizontal length measured from end to end of rail, excepting concrete posts, but without deductions for spaces between rail sections.
- Concrete and reinforcing steel for End Post are included with Superstructure or End Bents.

ALUMINUM RAILS

- Aluminum alloys are as follows:
- | | |
|--------------------|--------------------|
| Cast Rail Posts | A356-T6 |
| Round Tubular Rail | 6061-T6 or 6062-T6 |
| Set Screws | 2024-T3 |
| Closure Plates | 6061-T6 or 6062-T6 |
- Round Tubular Rails are ~~made~~ of 4" O.D. with 3/8" minimum wall thickness.
- The base of rail posts, or any other aluminum surface in contact with concrete ~~shall~~ be thoroughly coated with an aluminum impregnated caulking compound of approved quality.

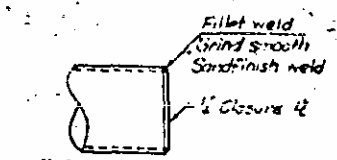
GALVANIZED STEEL RAILS

- Material and galvanizing are to conform to the following specifications:
- | | |
|------------------------|--|
| Cast Rail Post | Malleable cast iron, ASTM A47 Grade 350B, Galvanized to ASTM A123. |
| or | Cast Steel, A530 1A192-C8 Class 70, Galvanized to ASTM A123. |
| 4" O.D. Rail | Standard 3 1/2" Steel Pipe, ASTM A53 Grade B, Galvanized to ASTM A123. |
| Closure Plates & Shims | Steel, ASTM A-15 Grade C, Galvanized to ASTM A-123. |
| Set Screws | Standard Steel Cap Screws, Galvanized to ASTM A153. |
- The cut ends of galvanized pipe railing, the end closure plate weld after grinding smooth and areas adjacent to the weld where spatter coating has been buried by welding shall be thoroughly cleaned by wire brushing to remove all traces of welding flux and loose or cracked spatter after which these areas shall be given two coats of zinc paint meeting the requirements of Federal Specification MIL-P-26913 (USAF) Type 1.

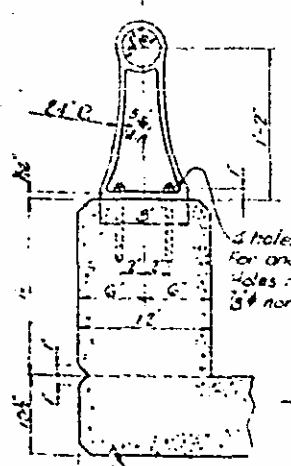


PLAN

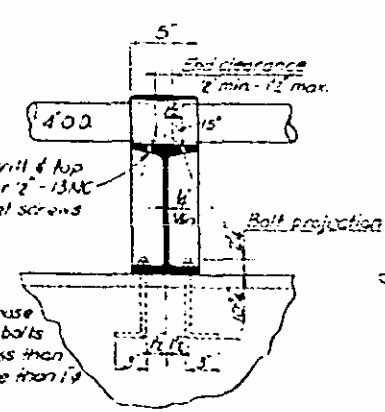
Pay length 309 L.F.



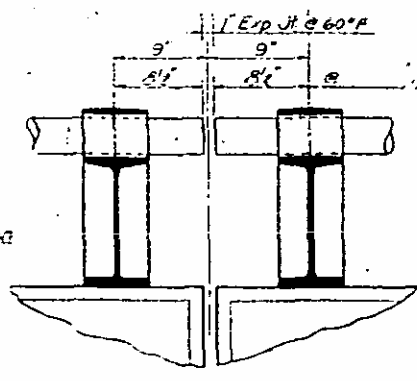
DETAIL
END CLOSURE



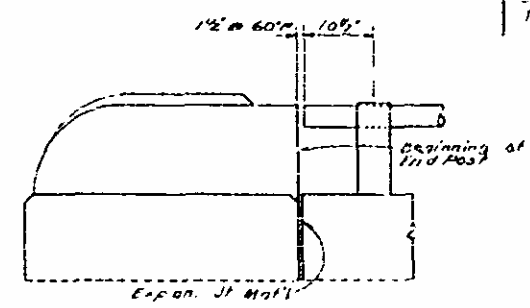
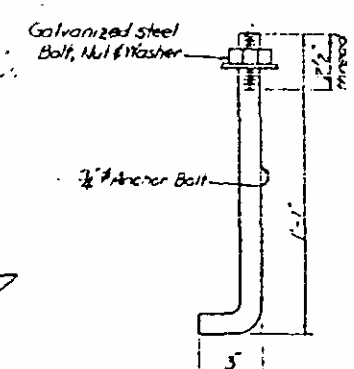
POST DETAIL



DETAIL & EXPANSION JOINT



DETAIL OF ANCHOR
BOLTS



END POST DETAILS

PROJECT NO. 83191101
BUNCOMBE COUNTY
STATION 63+5334

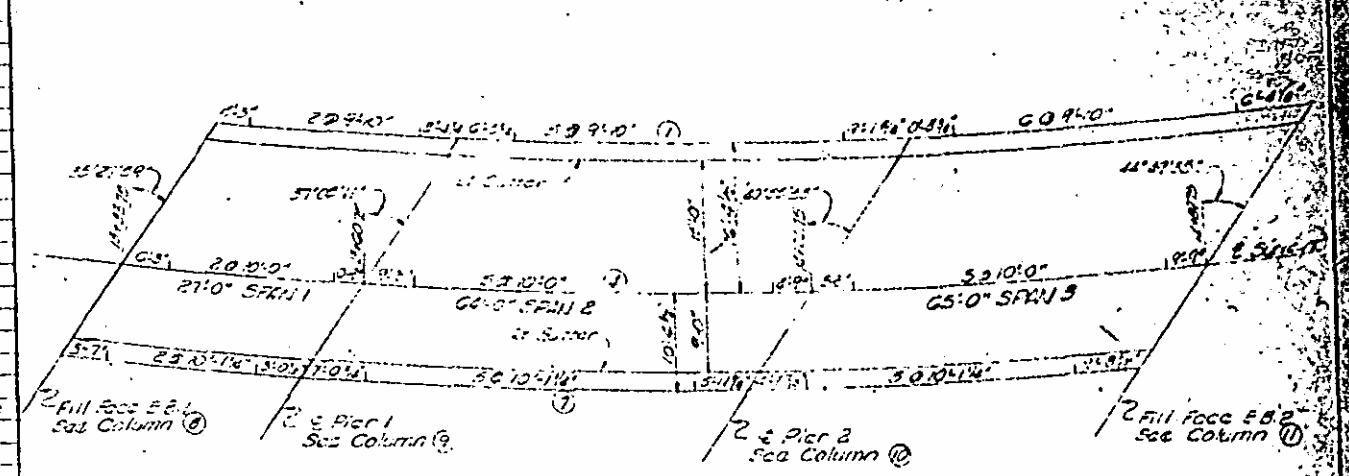
STATE OF NORTH CAROLINA
STATE HIGHWAY COMMISSION
HALEIGH
STANDARD
1 BAK
METAL RAIL
October 1962

DESIGNED BY: DSHL DATE: 10-6-62
CHECKED BY: CCF DATE: 7-8-62
SPECIAL

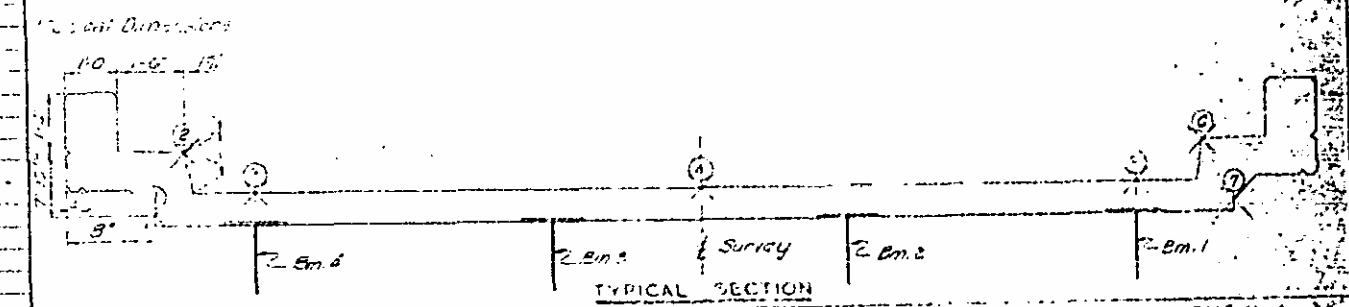
REVISIONS
DATE BY
110

COLUMN ① Bottom of Overhang	COLUMN ② Top of Curb	COLUMN ③ Top of Exterior Beam	COLUMN ④ E Surveys	COLUMN ⑤ Top of Exterior Beam	COLUMN ⑥ Top of Curb	COLUMN ⑦ Bottom of Overhang
Dist. Elevation	Dist. Elevation	Dist. Elevation	Dist. Elevation	Dist. Elevation	Dist. Elevation	Dist. Elevation
203.552 Fill Face			203.541 Fill Face			203.991 Fill Face
4.3 56.789 13+20			0.5 56.629 13+10			3.7 56.135 13+20
5.2 56.782			1.5 56.183			4.0 56.709
6.2 56.767 13+70			2.5 56.625 13+60			5.0 56.223 13+50
7.2 56.985 8 Pier 1			3.5 56.719 8 Pier 1			6.0 56.375 8 Pier 1
8.2 56.537 13+80			4.5 56.137 13+70			7.0 56.728 13+60
9.2 56.000			5.5 56.637			8.0 56.207
10.2 56.132			6.5 57.092			9.0 56.677
11.2 56.563			7.5 57.535			10.0 57.120
12.2 56.777			8.5 57.963			11.0 57.576
13.2 57.376 13+30			9.5 58.471 13+20			12.0 58.003 13+10
14.2 57.131 8 Pier 2			10.5 58.708 8 Pier 2			13.0 58.267 8 Pier 2
15.2 57.721 13+40			11.5 58.776 13+10			14.0 58.317 13+20
16.2 56.711			12.5 59.101			15.0 58.816
17.2 59.437			13.5 59.531			16.0 59.207
18.2 59.820			14.5 59.939			17.0 59.571
19.2 59.157			15.5 60.330			18.0 59.928
20.2 59.471			16.5 60.557			19.0 60.270 13+70
21.2 59.770 13+100			17.5 60.563 Fill Face			20.0 60.533 Fill Face
22.2 59.785 Fill Face						

GRADE DATA
 +1.92%
 -2.00%
 P.I. STA. 15+00
 P.I. ELEV. 503.92
 LENGTH OF CURVE 200'
 61+792.62 -2.00%



PLAN
 SPANS 1-2-3



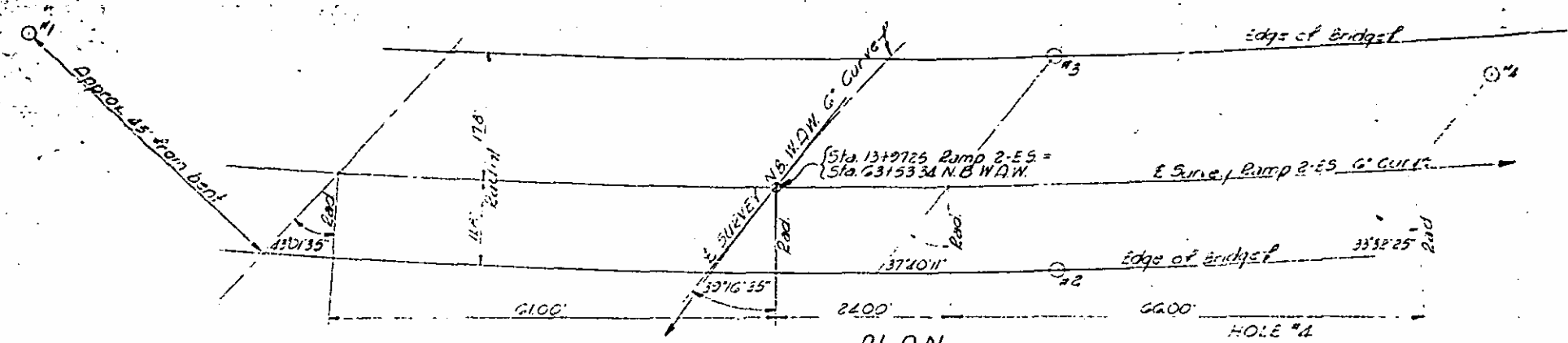
Elevations shown in Columns ① through ⑦ are final required elevations of the completed structure. In setting up the form and screed elevations, provisions must be made for deflections where required.
 For Columns ② through ⑦, given elevations are at intervals shown from the left gutter line to the right gutter line.

TABLE OF DEAD LOAD DEFLECTIONS (inches)									
	SPAN 1	SPAN 2	SPAN 3	SPAN 4	SPAN 5	SPAN 6	SPAN 7	SPAN 8	SPAN 9
Beam in place	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
Superimposed D.L.	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
Total	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Vertical Curve End	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"

COLUMN ⑧ Fill Face of E.B. 1	COLUMN ⑨ Top of Pier 1	COLUMN ⑩ Top of Pier 2	COLUMN ⑪ Fill Face of E.B. 2	COLUMN ⑫ Top of Pier 3	COLUMN ⑬ Top of Pier 4
Dist. Elevation	Dist. Elevation	Dist. Elevation	Dist. Elevation	Dist. Elevation	Dist. Elevation
203.552	203.541	203.991	203.552	203.541	203.991
4.3 56.789	0.5 56.629	3.7 56.135	4.3 56.789	0.5 56.629	3.7 56.135
5.2 56.782	1.5 56.183	4.0 56.709	5.2 56.782	1.5 56.183	4.0 56.709
6.2 56.767	2.5 56.625	5.0 56.223	6.2 56.767	2.5 56.625	5.0 56.223
7.2 56.985	3.5 56.719	6.0 56.375	7.2 56.985	3.5 56.719	6.0 56.375
8.2 56.537	4.5 56.137	7.0 56.728	8.2 56.537	4.5 56.137	7.0 56.728
9.2 56.000	5.5 56.637	8.0 56.207	9.2 56.000	5.5 56.637	8.0 56.207
10.2 56.132	6.5 57.092	9.0 56.677	10.2 56.132	6.5 57.092	9.0 56.677
11.2 56.563	7.5 57.535	10.0 57.120	11.2 56.563	7.5 57.535	10.0 57.120
12.2 56.777	8.5 57.963	11.0 57.576	12.2 56.777	8.5 57.963	11.0 57.576
13.2 57.376	9.5 58.471	12.0 58.003	13.2 57.376	9.5 58.471	12.0 58.003
14.2 57.131	10.5 58.708	13.0 58.267	14.2 57.131	10.5 58.708	13.0 58.267
15.2 57.721	11.5 58.776	14.0 58.317	15.2 57.721	11.5 58.776	14.0 58.317
16.2 56.711	12.5 59.101	15.0 58.816	16.2 56.711	12.5 59.101	15.0 58.816
17.2 59.437	13.5 59.531	16.0 59.207	17.2 59.437	13.5 59.531	16.0 59.207
18.2 59.820	14.5 59.939	17.0 59.571	18.2 59.820	14.5 59.939	17.0 59.571
19.2 59.157	15.5 60.330	18.0 59.928	19.2 59.157	15.5 60.330	18.0 59.928
20.2 59.471	16.5 60.557	19.0 60.270	20.2 59.471	16.5 60.557	19.0 60.270
21.2 59.770	17.5 60.563	20.0 60.533	21.2 59.770	17.5 60.563	20.0 60.533
22.2 59.785			22.2 59.785		

PROJECT NO. 83191101
 BUNCOMBE COUNTY
 STATION: 63+53.34
 STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 W. ASHEVILLE-WEAVERVILLE CORN.
 RAMP 2-ES over NB WA-W CORN.
 3 SPAN DECK I-BEAM BRIDGE
 FOR SETTING UP
 FORMS AND SCREEDS
 SCALE AS SHOWN
 5:60
 110'

DESIGNED BY: JES
 SPECIAL: JES
 CHECKED BY: JES
 DATE: 3-62
 DATE: 3-62
 DATE: 3-62



2055						2055
2050						2050
2045						2045
2040						2040
2035						2035
2030						2030
2025						2025
2020						2020
2015						2015
2010						2010
2005						2005
2000						2000
1995						1995
1990						1990

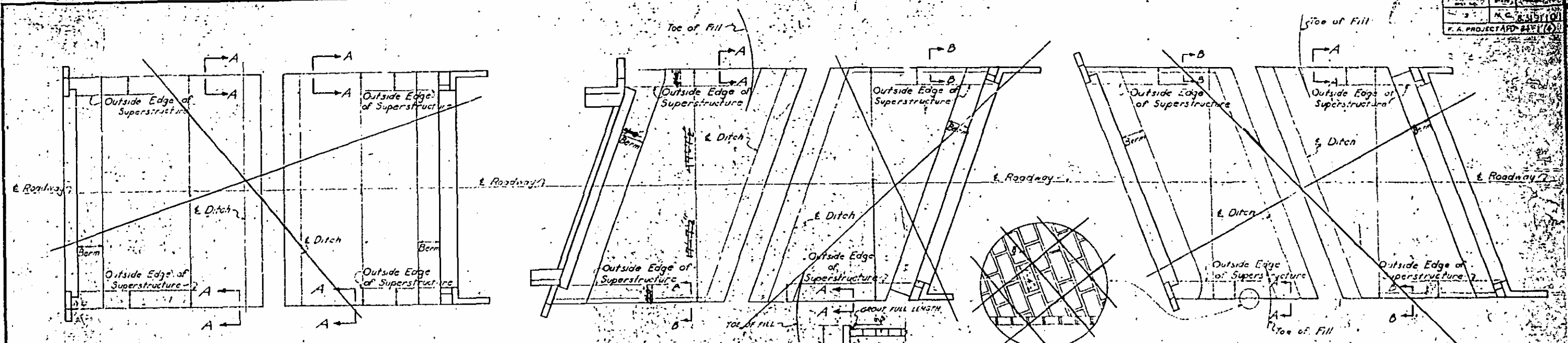
HOLE #2	HOLE #3
2023.4 Red-brown, silty, micaceous clayey saprolite	2050.5 Red, silty, micaceous saprolite
2020.4 Brown, sandy, micaceous	2041.5 Red to white, silty (31 blows/foot)
2033.4 Tough saprolite (122 blows/ft)	2040.5 micaceous saprolite
2036.4 Tough saprolite	Silty, micaceous saprolite
2034.4 Rock layer	
2030.4 Brown, silty, tough saprolite	2031.5 Brown-gray, (35 blows/foot)
2029.4 Brown-yellow very micaceous	2030.5 micaceous saprolite
2028.4 Tough, sandy saprolite (63 blows/foot)	Brown, micaceous saprolite with rock fragments
2025.4 Brown, silty saprolite	2023.5 Tough, brown, micaceous saprolite
2020.4 122 blows/ft-not true test	2022.5 Auger refusal on rock.
2013.4 Brown, silty, micaceous saprolite	
2010.4 Tough layer (above sample tube 0.15" in 50 blows) (Water at 2009.4)	
2009.4 Wet, brown, micaceous saprolite	
2008.4 clayey saprolite	
2006.4 Bk. rock	
1993.0 Yellow-brown, (Water at 1993.0)	
1990.4 clay saprolite	
1985.0 Rock	

VERTICAL SCALE 1"=5'-0"

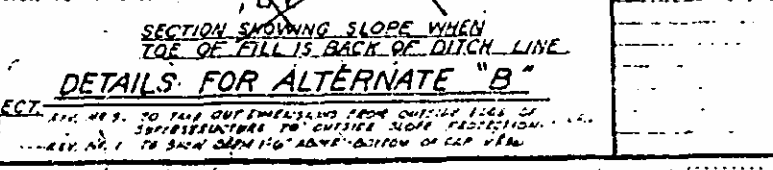
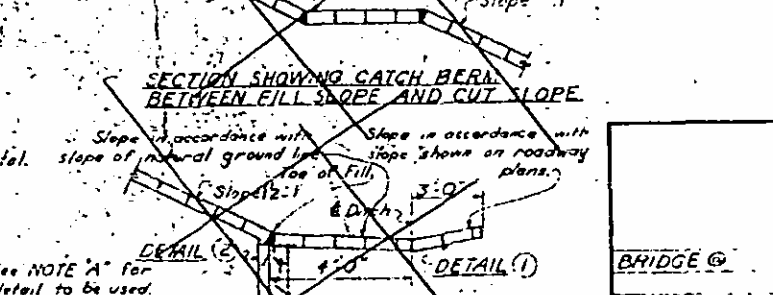
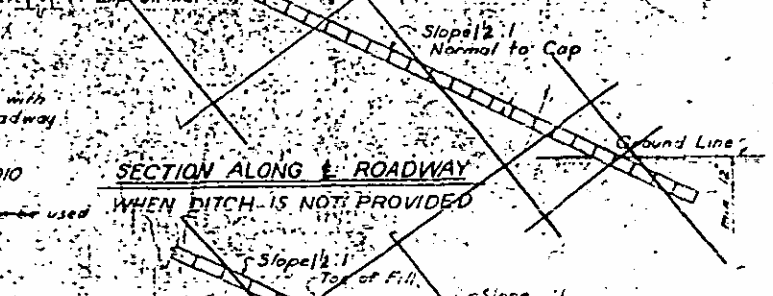
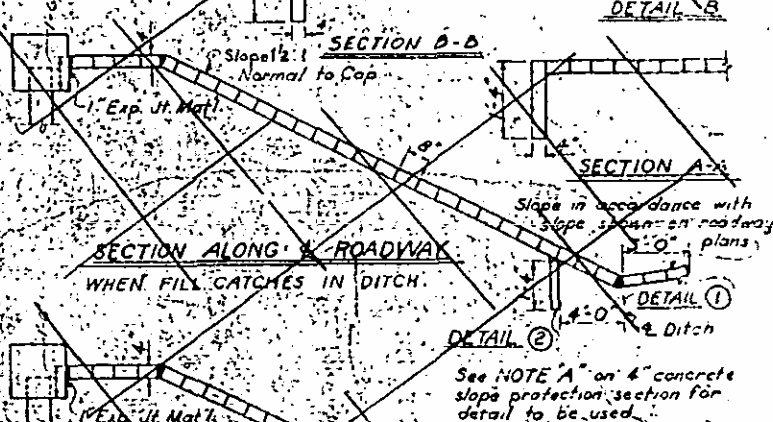
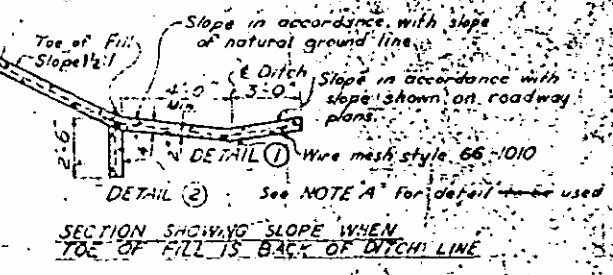
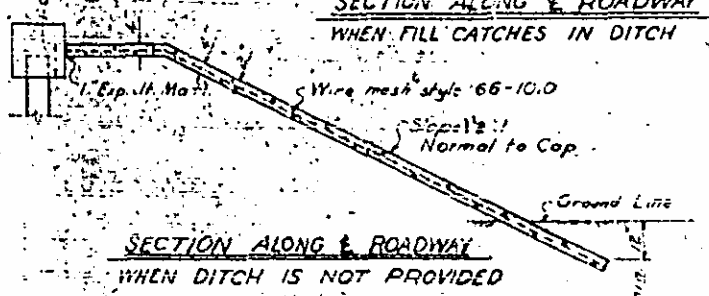
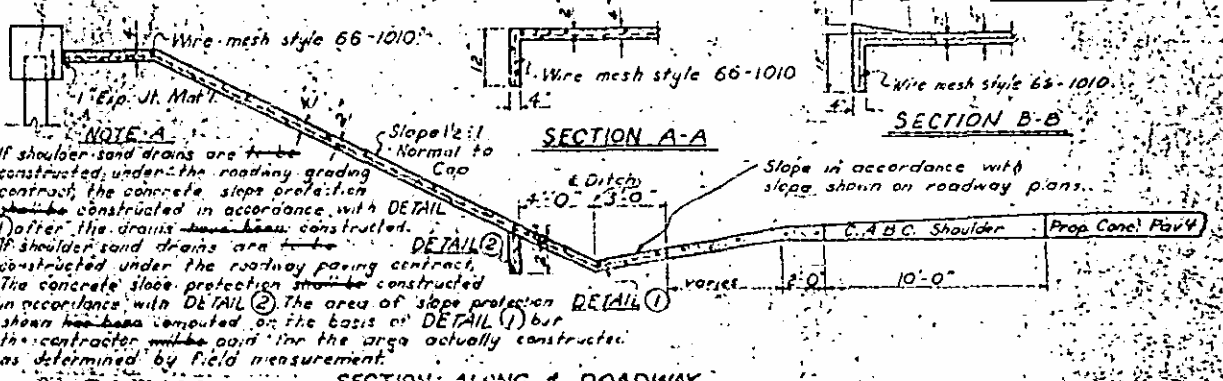
PROJECT NO. 83-1311-01
 BUNCOMBE COUNTY
 STATION 63+53.34

STATE OF NORTH CAROLINA
 STATE HIGHWAY COMMISSION
 RALEIGH
 W. ASHEVILLE-WEAVERVILLE-CONN.
 RAMP 2-ES over NBWA-W. CONN.
 3 SPAN DECK I-BEAM BRIDGE
 BORINGS
 SCALE AS SHOWN

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 2-88



PLAN



NOTES:
 A 4" concrete slope protection paving shall be placed under the ends of the bridge. Limits of the protection shall be as shown in the details. The contractor, at his option, may place the paving. Alternate "A" as described below immediately before placing the paving, the slope shall be properly shaped and firmly compacted so that it conforms to the lines and grades shown. The finished surface shall be reasonably smooth and uniform and shall not vary from lines, grades, and sections shown by more than 1/4" along a 10' straight edge.

ALTERNATE "A"
 Alternate "A" shall consist of 4" poured in place concrete paving as shown in details on this sheet. Concrete shall be Class B using Standard size Number 3 coarse aggregate. The concrete surface shall be floated with a wooden float and finished.

ALTERNATE "B"
 Alternate "B" shall consist of solid concrete blocks 4" x 8" x 16" laid in horizontal courses such that there is a staggered joint in every course. Break joints with units in the preceding one. Blocks are to be laid with their long axis parallel to the end and bent cap with graded joints preferably 1/4" but not less than 1/2" for more than 1/4" wide between successive courses and ends of blocks. Joints shall be graded by pouring a mixture of one part Portland cement to three parts sand mixed with sufficient water to make the mixture to be poured through a spout.

The concrete blocks shall be cast to accurate dimensions, shall have uniform surface color and texture and shall be manufactured of materials to produce a compressive strength of not less than 3000 psi at age of 28 days. No broken blocks shall be used except in construction of straight line along each side of the paving down the slope. Care shall be taken to break the blocks to give a uniform workmanlike joint and surface.

Method of measurement and basis of payment shall be as prescribed above under Alternate "A".
 ALTERNATE "A" wire mesh reinforcing to be style 66-1010 60" wide. Adjacent ends of wire mesh to be placed in alternate 4" x 5" slopes as shown in Paving Detail. The cost of wire mesh to be included in the contract unit price bid per square yard for 4" concrete slope protection.
 The same type of slope protection shall be used under both ends of any one bridge.

PROJECT NO. 28-31-110
 BUNCOMBE COUNTY
 STATION: 63+53.34

APPROVED BY: W. Harrison, Jr. DATE: Oct 1963
 CHECKED BY: G. K. Hill DATE: Oct 1963

DETAILS FOR ALTERNATE "A"

DETAILS FOR ALTERNATE "B"

BRIDGE @	4" Conc. Slope Protection	Wire Mesh 60" Wide
E.B. 1	139/34.23	220
E.B. 2	52/28	800

STATE OF NORTH CAROLINA STATE HIGHWAY COMMISSION	
STANDARD SLOPE PROTECTION PAVING DETAILS	
Month	1964
Sheet	5-62
	110

SUMMARY OF QUANTITIES STRUCTURES OVER 20' SPAN

83191101 S-110
APP-34-1

BRIDGE STATION

25+07³⁵ N.B

25+07³⁵ S.B

36+12⁰⁰ ✓

63+53³⁴ ✓

77+82⁸³

86+21⁶⁹

102+76²⁰ ✓

TOTALS

UNCLASSIFIED STRUCT. EXC.	STRUCT. EXC. WET	STRUCT. EXC. DRY	STRUCT. EXC. 3-6' BELOW PAV. PILES	12" STEEL PILES 53#	CLASS A CONC.	STEEL REINFORC.	STRUCT. STEEL	4" CONC. SLOPE PROT.	I BAR METAL RAIL	METHOD A WATER PROOF	CHAIN LINK FENCE 16-2" FABRIC
	100.89 107.93	434.26 477.05		363.66 ✓	578.31 578.87	157,385	365,700 ✓		1246.0		
	72.80 104.36	624.23 626.68	2.88 ✓	601.21 ✓	658.75 672.47	150,044	420,500				
	147.18 ✓			474.25 ✓	318.42 ✓	53,508	99,400 ✓	329.43 ✓	294.0		
	127.00 ✓			1,598.19 ✓	310.20 ✓	55,343	97,640 ✓	443.25 ✓	308.0 ✓		
	148.13 163.25				149.37 ✓	20,904					1940.16 P.W.
	335.64 432.84			3,815.87 ✓	821.50 ✓	154,365 171,285	341,300 ✓	1069.27 ✓	297.5	EX. VAL. 48.41	
	312.85 312.52				506.40 ✓	82,561	132,400 ✓	219.99 ✓	254.5	25.0	
	1796.79 1603.10	179.68 212.89	1061.48 1065.73	2.88 ✓	6,853.18 ✓	3355.57	1,156,940 ✓	2085.69 ✓	2599.6 ✓	25.0	1940.1